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MEASURING THE VALUE OF THE INSIGNIA BRAND PRODUCTS: A STRUCTURAL MODELLING APPROACH

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TESE DE DOUTORAMENTO EM CIÊNCIAS EMPRESARIAIS

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Biography

Amélia Brandão is graduated in Enterprises Management from the Universidade Portucalense Infante D. Henrique, Porto, in 1995. She holds a Master degree in Finance from the Universidade Portucalense Infante D. Henrique, 2003. She has been a Ph.D. student at the Faculdade de Economia do Porto (FEP) since 2006. Presently she is invited Assistant of Marketing and Brand Management subjects in FEP, since 2004. Additionally she is teaching Managerial Communication, Strategy Communication and Marketing in Faculdade de Letras da Universidade do Porto, since 2008 until present. She is invited teacher in Porto Business School (PBS) at Integrated Communication of Marketing subjects in Postgraduate courses since 2006 until present.

Her previous work experience was in brand management consultancy at Associação Nacional de Jovens Empresários (ANJE), Associação Empresarial de Portugal (AEP), Markamos and XZ Consultores. She was coordinator and trainer for various projects and was senior consultant in micro enterprises (Formação e Ação em Micro Empresas -Fame project). She was Supervisor of Work Placements and Assistant Teacher at Universidade Portucalense Infante D. Henrique, 1995-2005, in undergraduate course, of Microeconomics, Marketing Research, Brand Management and Marketing Management subjects. From 2000 to 2004 she was Erasmus Visiting Assistant Teacher at Faculdad de Ciencias Economicas y Empresariales, Universidad de Sevilla, in Marketing Undergraduate course.

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Summary

The goal of this thesis is to understand and conceptualise the value of the insignia brand products in the Portuguese large distribution context. The first chapter, comprising a qualitative approach via semi-structured interviews, deals with the understanding of which variables are critical to the private label decision-makers in order to establish and improve the value of their insignia brand products. The interviewers of four private label retailers in Portugal indicated Brand Trust and Value Consciousness as the main drivers of the Insignia Brand Value.

The further chapters involves empirical quantitative research examining a total sample of 3200 consumers from three insignia brands which are representative of the consumer goods large distribution´s formats in Portugal - hypermarket, supermarket and hard discount. Whereas the second conceptualises the measurement scales and validates the Insignia Brand Value construct, the third, analyse the social demographic and economics determinants of the Insignia Brand Value. Moreover, the fourth chapter propose and validate a structural model and the latter consolidate the model consistency across two sub-samples.

More concretely, the fourth chapter develops and estimates a structural equation modelling (SEM) to assess the determinants and consequents of the Insignia Brand Value (IBV). Such theoretical and practical contributions on how to conceptualize and measure this new latent construct attempt to fill the gap in the literature on the Insignia Brand Value (IBV) and helps to understand the process of consumer behaviour and to offer guidelines to how to build Insignia Brand Value. Lastly, the fifth chapter applies invariance analysis statistics tests across two groups. Its aim to identifying and analyse the configural and metric invariance of the Insignia Brand Value model. The highest and lowest penetration rate of the insignia brand product category, in Portugal, is taken in account to obtain two sub-samples. This chapter provides useful information to the private labels managers, about the dimensions of the Insignia Brand Value that are invariants and noninvariants across different product category.

Keywords: Insignia Brand Value (IBV), SEM, store brands, private labels, retail brand equity, brand equity, ANOVA, binary logit model.

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Introduction

This thesis introduces a new concept within the realm of the brand management measurement: the Insignia Brand Value. It draws upon the brand equity notion and, more specifically, its application to the private labels context. The review of the existing literature on private labels doesn´t contemplates the value associated to the products whose denomination match the store name. Moreover, the new concept concerns the economic, functional and rational benefits, as perceived by the consumers.

Previous studies refer the need to create and capitalize the value of the brands as a strategic-intangible asset, through brand equity construct Aaker and Álvarez Del Blanco (1994), (Keller 1993, Aaker 1991, Kapferer 1992). Literature review on brand equity also emphasize the importance of its measuring and proposes different perspectives and methodology approach (Kapferer 2008, Na et al. 1999, Yoo et al. 2000, Myers 2003, Netemeyer et al. 2004). The vast scientific production on brand equity, however, tends to narrowly focus on the national brands domain which pinpoints the price-premium as a brand equity outcome (Farquhar 1990, Keller 1993, Barwise 1993, Simon and Sullivan 1993).

More recently the brand equity conceptualization and measuring has been extended to the private labels or store brands domain yielding the retail brand equity (RBE) (Gil-Saura et al. 2013, Musekiwa et al. 2013, Swoboda et al. 2013, Jara and Cliquet 2012) and the store brand equity concepts (Beristain and Zorrilla 2011).[1]

Against the previous research on brand management, this investigation argues that the value of the insignia brand products must be conceptualized and measured in an independent way from others store or private labels typology and from national brands. Accordingly, a new construct will be discussed in the present dissertation, the Insignia Brand Value.

[1] It should be noted that for practical considerations a further and more specific literature review will be proposed ahead within each of the following chapters of this dissertation.

The results validated the strength of this new construct which appears as a unidimensional scale composed by ten items with a total of variance explained around 75,667%. Moreover, the reliability of the scale was confirmed with a .963 coefficient alpha.

Problem Definition

Following the trend in other countries, the private labels are in a growing phase, in Portugal, thus overcoming the stigma that relates low cost products with lower quality. Bearing in mind that the concept of brand equity applied to national brands power should be applied and extended to store brands, it is crucial to identify the factors behind it. Additionally it will be interesting to capture the point of view of who was or is still sceptical regarding this type of brands, i.e., from the perspective of the consumer. It is also generally accepted that the evolution of the private labels as well as its assessment by the consumers tend to be made against the pattern of the national or leading manufacturer brand. So, what are the determinants of the value of private labels or store brands, assuming that it cannot be divorced from the existence of the manufacturer´s' brands? The presence or availability of private labels is limited to a network, chain or a distribution type. When opting out for one of the brands and distribution formats- hypermarkets, supermarkets, hard-discount, grocery and/or specialty stores- the consumer reduces the variety of option and determines the private labels object of his buying decision process. The attitude towards point of sale (store brand attitude) is what determines the acquired brands, given that the private labels are specific to each of the assignments. For example, the Pingo Doce brand is marketed exclusively in the store network with that badge. Thus, the choice of point of sale (e.g.: Continente, Pingo Doce or Dia/ Minipreço) determines the private labels object of the purchase decision process and, consequently, the purchase made. This constitutes an unique specificity of insignia brand when compared to national brands, since they cut across the different designations and distribution formats. For example, Coca- Cola brand product is physical available in all kinds of networks supply chains of consumer products. Consequently, his value isn´t influenced by the consumers store brand attitudes.

As a result of different attitudes that a consumer can manifest towards each brand and associated with the type of product category in question, brand trust becomes a construct

that can leverage or restrict the value of the brand in question. This variable assumes a very strong visibility and intensity in the context of private labels, in general, and, in the insignia brand products context, in particular. The consumer for the same product category trusts, separately, in different insignia brands according to their attitude toward this brand and the perceived risk that it entails. This risk encompasses both the functional and physical risk in the context of categories of food and/or cosmetic product categories. The value for the insignia brand is immediately associated with an economic advantage, that is to buy a product with the same characteristics of a national brand for a much lower cost. This reality reflects the perception of the price versus the quality relationship perceived by the consumer. Put differently, the value consciousness towards the insignia brand, could create or leverage his value. Furthermore, the existence of an insignia brand equity will generate a feeling of pleasure, hedonism and inner satisfaction in its consumer, introducing an emotional component to a rather rational purchase process. The value of the insignia products reflects a positive attitude towards the brand, the existence of trust in the brand, a low perceived risk and the existence of a positive, favourable relationship between the price and the quality of the concerned product. Consequently, the value of the insignia brand will ultimately trigger a distinct satisfaction for a product with the designation of a national brand. Although such satisfaction involves an emotional dimension the factors of rational nature comprised are yet to be reflected in the literature review.

Thus, the concept of Brand Equity stands apart from those of store brands and particularly, insignia brands. The classical concept of Brand Equity, as usually applied to well-known brands (product-premium), refers to the added value of being associated to a product which may increase the variable being measured by the absolute price and price-premium. Thus, what is the Brand Equity applied to the distribution brands? It is a benefit that results from an economic value/ price advantage, of a tangible nature. However, since it additionally features an intangible dimension of the inner pleasure it also brings with it a measure of rational hedonism.

Unlike the traditional Brand Equity, the value of the insignia store brand cannot be measured by the price- premium, but by a cost -premium that is guided by rational

arguments which also constitutes a valuable asset for both the consumer and tags' owners. Whereas national brands cancel a resistance to the price factor, store brands strengthen the bond to the brand for good perceived price/quality ratio.
Within the private labels context, this investigation will focus on the insignia brand products for two fundamental reasons. The first one related to the fact that insignia brands were the first type of private labels to emerge in Portugal. Second, because insignia brands are spontaneously associated by consumers to the private labels and consequently, bringing with it a stigma relating to their value.

The originality of this thesis is to make a considerable contribution to the field of the brand management measurement. Indeed, it aims to attempt to fill the gap in the literature by providing theoretical, methodological and practical contributions on how to conceptualize and measure a new proposed construct on Insignia Brand Value (IBV). Moreover, this investigation offers a new insight on the IBV consumer profile with the consequent practical recommendations to the decision makers. This new insight will be consolidated and validated in the subsequent confirmation of the proposed theoretical model. The implications help to understand the process of consumer behaviour and to offer guidelines to how to build Insignia Brand Value.

Methodology

To achieve the aims of the thesis, different and sequential multi methodology approach will be carried out. The first one consists of a qualitative approach dwelling upon a comparative case study of four private label retailers in Portugal. The purpose of this methodology is to understand how private label decision-makers establish and improve the value of their brands. In order to do so, several information about private labels´ variables decision making over time will examined by resorting to data collected from semi-structured interviews of four private label retailers in Portugal. Against previous studies that have identified the economic benefit to the consumers as the most important benefit of private label products, this research suggests that price is not the most important variable in the Insignia Brand Value context, as it will be discussed in the chapter 1. The results indicate that brand trust and value consciousness appear to be the main drivers of

Insignia Brand Value. Above all, the results will support helpful guidelines to incorporate in the next methodology of this thesis.

The second methodology is a quantitative one related to the new Insignia Brand Value construct. The initial step to operationalize this approach is to discuss and define the dimensions of the new Insignia Brand Value latent construct. Then the profile social demographic and economics will be achieved by a set of parametric tests, via ANOVA and non-parametric tests (Mann-Whitney and Kruskal- Wallis). Moreover, a binary simple and aggregate Logit function, YIBV, is created in order to analyze the simultaneous interaction and effects by six independent variables on the dependent variable, YIBV. The EViews 8 will be the statistical software applied to this econometric analysis.

Then, the aim is to identify the determinants and consequents of Insignia Brand Value, proposing a new structural equation modelling (SEM). From an empirical perspective, a survey will be carried out with 3200 consumers in three types of retail chains, in order to analyse the relationships of the model. With a SPSS AMOS 21 software support, the results reveal that consumer store attitude and brand trust are the main antecedents with a significant impact on Insignia Brand Value. Additionally, this part of the thesis confirms the validity of the Insignia Brand Value construct as a new insight to the brand management from both academic and managerial perspectives.

The third methodology to be employed is also of a quantitative nature aiming at a multi-group invariance test of the new Insignia Brand Value construct. While analysing the consistency of the proposed structural equation model across two distinct groups, the results reveal that the model presents a configural invariance analysis and a metric invariance according to the CFI standard. This enhances, once again, a wide consistency of the model.

Regardless of this brief description of the methodological choices adopted in this research a more detailed description of the multiple analytical tools of analysis will be developed at the different respective sections of the distinct chapters of the thesis.

Structure of the thesis

This thesis comprises five chapters besides the introduction and the conclusion. All chapters are sequential, interdependent, and have a similar structure consisting of an introduction, followed by literature review of the most important concepts of the chapter as well as the methodological considerations, and conclude with the results and a discussion of the main findings.

Chapter 1 begins with an examination of the relationships amongst private labels and brand equity. In order to understand how private label decision-makers establish and improve the value of their own brands, four semi-structured interview-based qualitative research are presented. Additionally a set of theoretical propositions will be formulated in order to understand how decision-makers create and improve value to their insignia brand products. New insights result from this research will be incorporated into the next chapters.

Chapter 2 concerns the proposal and testing of the new Insignia Brand Value (IBV) as a new latent construct and a set of variables to measure it. The scales of measurement of all latent constructs, required to understand the determinants and consequents of the IBV are hereby introduced. Additionally, empirical measurement validation and a confirmatory factor analysis is carried out on a sample of 3200 consumers.

Chapter 3 assays the Insignia Brand Value consumer´s profile. A set of independent variables (such as gender, age, civil status, household members, education and household income) are considered, one by one, across three different retail formats- hypermarket, supermarket and hard discount and its impact on the Insignia Brand Value (IBV). Further, a simultaneous interaction of all these descriptive variables on the IBV is performed.

Chapter 4 proposes a list of the research hypotheses and a structural equation modelling (SEM) of the determinants and consequents of the Insignia Brand Value.
Lastly, chapter 5 analyses the configural and metric invariance across two sub-samples of consumers in order to confirm the consistency of the model across two different groups. The decision consists in dividing the original 3200 universe of respondents into two

distinct products categories with contrasting market share but in both cases still representative of the consumer goods large distribution' formats in Portugal - hypermarket, supermarket and hard discount - according to what was proposed by the decision-makers in chapter 1. Configural and metric invariance analysis, according to the CFI criterion, shows that the original seven-factor structure can be used across the insignia product categories with high share of market penetration and the insignia product categories with low share of market penetration in Portugal. This reflects, once again, a wide consistency of the Insignia Brand Value model introduced in this thesis.

The empirical evidence is relevant to both the academia and managerial world. That is so, to the extent that conceptualizing, measuring and modelling the Insignia Brand Value.

Chapter 1

Understanding the Value of the Insignia Brands: the decision-makers´ perspective

1.0 Introduction

The research on private labels has recently received critical attention within both Brand Management literature and practice. Nonetheless, the academic understanding of private labels is still limited in scope and depth. Previous studies have reported that the most important benefit of private label products continues to be the economic benefit to the consumers in relation to the national brands (Tzimitra-Kalogianni et al. 2002, Baltas 1997). In addition, this perceived benefit, reflecting the value for money, makes less difference compared with the branded products. This value for money is the view of practitioners, perceiving it as a saving account that consumers could use for something else. The retailer is thus squeezed between the needs to offer a competitive price and to guarantee the best product quality. This represents a big challenge to the store brand managers, resulting in a decrease of their profit margins and a value added to the consumer. Although previous researchers suggested that there is a need to create and capitalize the brand equity of their brands as strategic intangible assets (Keller and Lehmann 2003), only few studies so far has examined private brand equity (Li 2010). The identification of factors that build brand equity represents a central priority for academics and marketing managers (Valette-Florence et al. 2011, Baldauf et al. 2009).

Private label sales are up everywhere and they deserve the efforts of the most important strategies developed by retailers in the last two decades (Berges-Sennou 2006). Retailers compete against national or manufacturer brands and, more and more, they compete amongst themselves, developing a careful strategic and operational marketing – product, price, promotion and private placement variables. Moreover, each of them is looking for a clear, unique and favourable perception by the consumer point of view as a means to

get a positive consumer behaviour answer (Ailawadi and Keller 2004). All in all, retailers' strategies must reach the value brand perception for all categories of their private/own labels products. This is more important under the store brand, a sub-brand with the retailer as the endorser (Aaker 1999), which is a private label brand, or retailer brand, using the name of the store in the label (Veloutsou et al. 2004, Keller 2003, Morganosky 1990).

This research had utilized a comparative case study approach to re-examine the relationships among private labels and brand equity**.** By adopting in-depth, comparative case studies, this study provides detailed explanations that survey methods miss and offers the prospect of new insights into the connections among these variables. By tracing the evolution of private labels, this study identified changes in private labels' decision makers over time. In this respect, comparative case studies are useful because they are particularly appropriate for studying organizational changes.

In the Portuguese market, one of the most important reasons that led to the growth of private label products in the market was the emergence of the economic crisis and the consequent decrease in consumers´ bargaining power. Today, the sales of private labels products in Portugal represent between 30%-50% of the total sales volume of large surfaces, with an exponential growth in the last years. Curiously, Portugal is the only country in Europe where the hypermarket format still continues with success. In all other countries the tendency is towards smaller solutions, such as supermarkets. Moreover, the rapid development of the participation of private label products into the total sales´ portfolio, since 2007/8, is getting closer and closer to their penetration in other countries of the European Union. There is thus a growing share of private label that is done mainly by the transference of manufacturer brands sales into the coming insignia brand products, and not by increased consumption by households in private labels already bought.

Following this, even though there exists an important number of published studies on private label products, no specific research on which critical variables help decision makers to improve the value of private label products has been carried out. Such studies have treated private branding as an overall trend without accounting for the brand equity

presence and variation of their value in private label shares across categories.

Taking all this into account, the main objective of this chapter is to understand how private label decision-makers establish and improve the value of their brands via semi-structured interview-based qualitative research.

To this end, existing literature related to private label products is reviewed and the research methodology is described. The results of the field research are then analysed and discussed, and a number of conclusions are drawn.

In the next section, will be introduced the preliminary conceptual framework derived from the existing literature. Following Yin (2009), who argued that case studies should start with theoretical propositions, this research began with a theoretical framework linking private labels and brand equity. Then will be used analytic induction to analyse four Portuguese private labels.

1.1 Theoretical Background

1.1.1 Private labels

The growing number and market share of private labels makes competition between national and store brands a hot topic for manufacturers and retailers. Retailers increasingly aim to position their chains in the minds of consumers as strong, attractive, and unique brands (Ailawadi and Keller 2004).

Private labels identify "the goods and services of a retailer and differentiate(s) them from those of competitors" (Ailawadi and Keller 2004). Many terms are used to denote various forms of retailers' private labels, such as private brands, store brands, own brands, retailer brands, wholesale brands and distributors´ own brands (Häkansson 2000), all of which appear to be used interchangeably in the literature (Wulf et al. 2005, Ailawadi and Keller 2004, Sethuraman 2003). The literature found that private labels are more than products.

This research presumes that they are brands too, which have a positive perceived value in the market.

In the literature, the main focus is in the competition between national brands and private labels (see, e.g., (Karray and Martín-Herrán 2009, Manzur et al. 2009, Arce-Urriza and Cebollada 2012).

Researchers have analysed the effects that a set of variables has on the difference in perceived risk between store brands and national brands and have identified the perceived risk as one of the key factors on consumer decisions (Richardson et al. 1994). Perceptions of low quality and risk provide the strongest negative categorization drivers and increase the likelihood that a product was an own label brand. This was the same for both users and non-users of private label brands. Research may also indicate whether consumer perceptions of private label brands are evolving over time. Facing keen competition in the retail market, especially during the current recessionary environment, many retailers are positioning themselves as price competitive to attract increasingly price-conscious consumers (Kopalle et al. 2009). Retailers seek to create an appealing price image through a mix of tactics and policies (Anderson and Simester 2003). Low prices (ALP) and low price guarantees (LPG) are always examples of store-price signals that retailers frequently use to induce a favourable store-price image and discourage consumers from comparing prices across stores (Ho et al. 2011).

In another vein retailers seek to obtain consumer confidence on private labels consumer decision process. Consumers´ trust in private label products is generally related to the trust in the related processes of production, selection and quality control and influences consumers´ perceptions of the benefits they enjoy from these products. The trust attribute was a significant differentiator for non-users, but not for users (Nenycz-Thiel and Romaniuk 2009).

Table 1 – Relevant Studies on Private Label

Authors	Purpose	Major Findings
Mieres et al. (2006)	Analyse the effects that a set of variables has on the difference in perceived risk between store brands and national brands	Variables most relevant: • Perceived quality of the store • Familiarity with the store brands • Confidence in the extrinsic attributes of the product to assess its quality
Kwon et al. (2008)	Investigate the effects of perceived product characteristics (i.e. involvement, product type and switching cost) and consumer value consciousness on private brand purchase intent.	1. Low involvement and perceived switching cost are ideal conditions for stimulating the purchase of private labels 2. Both high and low value conscious consumers are influenced by product characteristics.
Nenycz-Thiel and Romaniuk (2009)	Compare how brand users and non-brand users currently position private labels and national brands	1. Users of private labels did not see themselves as being less trustworthy than national brands. 2. Non-users of private labels did use trust to discriminate between the two types of brands and tended to use negative attribute information to categorize the brands into groups.

Authors	Purpose	Major Findings
		3. Regardless of experience, private labels form a subgroup in consumer's memory, with low price and low quality as the main drivers of this categorization.
Chaniotakis et al. (2009)	Identify the factors that affect consumer´s intentions of buying private labels frozen vegetables	1. Consumers who are positive toward private label frozen vegetables are also convinced that these products, apart from their competitive price, offer good value for money and have a packaging of equally high quality than that of branded products. 2. The higher the level of trust that consumers have in these products, the more the benefits that consumers perceive they get from these products. 3. Perceived economic situation has no direct effect on consumer attitudes, but influences directly the perceived benefits of the products.
Chaudhuri and Ligas (2009)	Study the simultaneous effect of merchandise value and store effect on two types of loyalty and	1. Merchandise value leads directly to repurchase loyalty. 2. Store promotions could emphasize improvements in quality.

Authors	Purpose	Major Findings
	willingness to pay a price premium	3. There are consumers who are happily enjoying a low-price deal and who are reluctant to pay higher prices since this would reduce the value of the deal.
Manzur et al. (2009)	Find out whether attitudes toward national brand promotions and store brands have similar or different conceptual antecedents.	1. Loyal consumers of national brands showed a weaker attitude toward store brands as well as toward promotions of other national brands. 2. Stronger store loyalty on the part of the shoppers leads to a greater probability of success for both store and national brands. 3. The value for money orientation taken by the retailers in the marketing of its store brands cannot be an optimal orientation. 4. A focus on quality could be a more effective tool for increasing value. 5. Consumers with higher smart shopper self-perception tend to like national brand promotions more than store brands.

Authors	Purpose	Major Findings
Lee and Hyman (2008)	The role of store-to-product category congruity on consumer´s perception and attitudes toward private label brands.	1. Retailers should consider the introduction of a private labels as a brand extension, with their stores as the parent brand. 2. When hedonic/functional beliefs about a store and its private labels are (in)congruent, the private labels is evaluated (less) more favourably. 3. Private labels in product categories that match the store´s image should be successful. 4. For functional products, Koreans tend to focus on objective value (i.e., price and performance). 5. For hedonic products, the focus is on surrogate quality indicators (e.g., brand and store name).
Ashokkumar and Gopal (2009)	Identify the important factors that determine the buying behaviour and the factors that help expedite or slow down the diffusion of private labels in food products.	Three major factors: 1. Curiosity and interest aspect. 2. Overall positive inclination aspect. 3. The likelihood of purchase of private labels in food products

Authors	Purpose	Major Findings
Li (2010)	Estimate Brand Equity from Aggregate Data	Preliminary result: • Some private labels have Brand Equity. • The Brand Equity estimates of private labels evidence favouring an "economic benefits and costs" value proposition in the carbonated soft drinks category. • Brand Equity of private labels correlates negatively with the prices of private labels. • National Brands correlates positively with price.

1.1.2 Brand Equity

Both practitioners and academics regard brand equity as an important concept (Keller and Lehmann 2006). Despite receiving considerable attention, no consensus exists about which are the best measures to capture this complex and multi-faceted construct (Raggio and Leone 2007). Part of the reason is the different perspectives adopted to define and measure this concept (Christodoulides and Chernatony 2010). The financial perspective highlights the value of a brand to the firm (Simon and Sullivan 1993, Farquhar and Ijiri 1993). On the other hand, the consumer perspective focuses the conceptualization and measurement of brand equity on individual consumers (Leone et al. 2006).

Adopting the latter perspective, brand equity denotes the added value provided by the brand to the product (Farquhar 1990). Aaker (1991), p.15, provides one of the most

accepted and comprehensive definitions of brand equity: “a set of brand assets and liabilities linked to a brand, its name and symbol that add to or subtract from the value provided by a product or service to a firm and/or to that firm´s customers”. Keller (1993), p.2, proposes a similar definition: “the differential effect of brand knowledge on consumer response to the marketing of the brand”.

Consumer-based brand equity measures assess the awareness, attitudes, associations, attachments and loyalties consumers have toward a brand (Keller and Lehmann 2006). These measures act as early evaluation signals about future performance (Srinivasan et al. 2010). From this perspective, the two main frameworks conceptualizing brand equity are those of Aaker (1991) and Keller (1993). According to Aaker (1991), brand equity is a multi-dimensional concept whose first four core brand equity dimensions are brand awareness, perceived quality, brand associations and brand loyalty. Keller (1993)´s conceptualization focuses on brand knowledge and involves two components: brand awareness and brand image.

Elements of a brand´s equity positively influence consumers´ perceptions and subsequent brand buying behaviours (Reynolds and Phillips 2005). Previous research suggests that marketing-mix elements are key variables in building consumer-based brand equity (Yoo et al. 2000).

Therefore, to increase the likelihood of such positive contributions and manage brands properly, companies need to develop strategies which encourage the growth of brand equity (Keller 2007). Which are the determinants of brand equity in a store brand context?

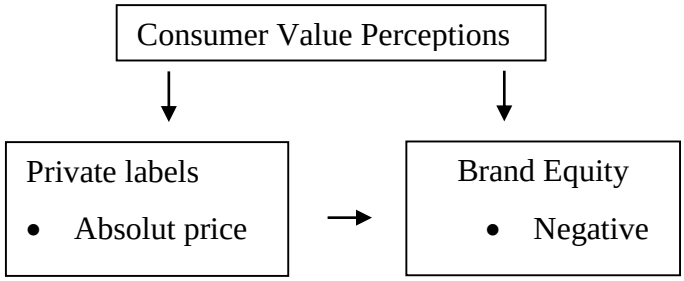
The retail brand equity concept is a recent view of the value created by retail brands (Jara and Cliquet 2012, Swoboda et al. 2009, Musekiwa et al. 2013). It provides a number of benefits to the store, such as, allowing the retailer to charge a price premium, to obtain consumer repeat purchases, and it offers competitive advantage. Furthermore, retailers can successfully develop private labels which have contributed over the years to a large proportion of their sales.

However, they have adopted a perspective of the service store evaluation. Therefore, a store brand equity comprehension and measure still remain inconclusive.

The above review suggests that although many studies on private labels and brand exist, they suffer from inconsistent conceptualizations and non-comparable empirical results. In Figure 1, this study offers a model that synthesizes past research on private label and customer-based brand equity.

Following Yin (2009) this investigation used a theoretical model as a benchmark, comparing the obtained data against the model using analytic induction.

Figure 1: A theoretical model of private labels and customer-based brand equity



Taking this theoretical background this study formulated a set of propositions in order to understand how decision-makers create and improve value to their store labels:

Proposition 1: The price/quality relationship of a private label product is positively related to the growth of the Portuguese private label market share.

Proposition 2: The exponential growth of Portuguese private labels' market share is positively associated to the consumer believe of consciousness value of these brands.

Proposition 3: The distinctive factor between private labels users vs. non-users will be deeply associated with the class of private label products.

1.2 Methodology

1.2.1 Case Selection

This investigation has conducted a case analyses of four private labels in Portugal. The companies and individuals are disguised to ensure confidentiality.

Several factors have been in account to selecting the cases. First, this investigation was limited to store brands. This type of private label products is the only one that matches the brand name of the point of sale. In addition and regardless of experience, Portuguese store brands form a subgroup in consumers´ memory, with low price and low quality as the main drivers of this categorization.

In the last years, store brands products have obtained the brand trust of consumers in the buying decision process. How decision makers understand and manage the proposition value of their store brand products?

A final and practical factor was access to informants.

1.2.2 Data Collection

The data for this study were collected from interviews and archives. This investigation have conducted in-depth interviews with executives and store brand managers of the four private labels in Portugal following a predesigned interview protocol. Most of the informants (see Table 2) had been involved in the store brand management from its early stages. Each interview lasted an average of three hours; some informants were interviewed more than once. Interviews were tape-recorded unless informants objected. To assure the accuracy of the interview data, member checks was conducted in which the original informants verified the tape transcripts or interview notes. All the interviews were conducted between April 2012 and June 2012. In addition to interviews, archival data were collected for each private label, including published case descriptions and online

information about prices, brand extensions of store brand label and product images on the point of sales.

Table 2: Sources of the Interview Data *

Private labels	Interviewees
Dia Portugal / Minipreço	(Mayte Hierro) - Private Label Director at Dia Portugal since 1999
Sonae Modelo Continente	(Marco Alberto Mendes Silva) - Private label director at Sonae MC
Grupo Auchan	(Margarida Malheiro) – Manager of Auchan Portugal Private Label
Grupo Jerónimo Martins	(Maria João Coelho) - Director of Pingo Doce private label

* Each paragraph represents one individual.

1.2.3 Data Coding

Data from different sources were coded using typical content analysis procedures. First, all data have been coded into a number of categories according to the proposed theoretical model (Yin 2009). These categories are (1) The reason for private label growth in Portugal, (2) Purchasing power of private labels consumers, (3) What are the reasons not to be user of private labels in Portugal, (4) Is the exponential growth of private labels due more to the crisis or to consciousness of value?, (5) Importance of the price factor in the Portuguese consumer decision, (6) Other critical variables, and (7) Product categories with higher penetration of private labels sales.

Table 3 provides examples of data coding.

Table 3: Examples of Data Coding

Coding Category	Examples
The reason for private label growth in Portugal	First. The price/quality relationship and the brand trust in store label products. Second. Crisis. Third. The I&D in design and product image – private labels brands attractiveness (Justify that the price is not so important because the market share of private label first price products is only 2% against 30% of private labels market share).
Purchasing power of private labels consumers	Portugal was very "brands lover." With the pass of the years it is becoming more and more in favour of private labels brands. Portugal is at the level of France, Germany (private labels increase). Nowadays, "the more intelligent consumers are, the greater the purchase of private labels products." In the past, people who bought private label products had fewer resources. Not now.
What are the reasons not to be user of private labels in Portugal	First: by stigma, for thinking that these are inferior products. Second. On taste, flavour or option. Preference for NB. (He gave the example of a child who only drinks chocolate milk brand Nesquik). Third: product quality with NB being perceived quality (can not be true) quite different and superior.

Coding Category	Examples
Is the exponential growth of private labels market share due more to the crisis or to consciousness of value?	It is due to consumer consciousness of value.
Importance of the price factor in the Portuguese consumer decision	It is important. Not in absolute terms, but in comparison with other products. We live in an era of dominance with first product price.
Other critical variables	Development of a range of consumer choice (brand extensions generate higher offer). Additionally, there is a faster development of private labels brands. Before the distribution was slow to react. Not today.
Product categories with higher penetration of private label sales	Dry Grocery basic (milk, pasta, beans, canned goods, flour, olive oil). Wash all toilet paper Wipes

Second, within each category, if data collected from different sources were inconsistent, the process has been through reconciled differences either with additional sources of data or through verification by the original informants. For example, interview data on the reason why private label growth in Portugal did not converge. Then was adopted the information provided by one of the informants because this investigation found support

for this source in archival data contained in a published report by a third, independent source. Overall, as Table 4 shows, triangulation across different data sources revealed a high level of consistency.

Table 4: Triangulation of Data (a,b)

Variables	Reasons Growth Private Labels Portugal	Purchasing Power Private Labels Consumers	Reasons not be user	Crisis vs. Consciousness of value	Price importance	Other variables	Private Labels penetration categories
Interviews with 1, 2, 3, 4 and archival	Modestly high	High	High	High	High	High	High

a) Informants are coded as follows: 1 = Jerónimo Martins Representative; 2 = Dia Portugal representative; 3 = Jumbo Representative; 4 = Modelo Continente representative.
b) High = All sources of data are in agreement; modestly high = at least two sources in agreement, others are not.

Data coding was conducted by the author. First, was developed the coding scheme and used it to analyse the cases.

1.2.4 Case Analysis Method

The method adopted in analysing the cases was analytic induction. In contrast to enumerative induction, which relies on statistical methods to generate simple, aggregate, and stable mental rules, analytic induction is a method of extending or refining existing theories by constantly comparing them with crucial instances or typical cases. Analytical

induction involves the following steps:
First, a rough definition of the phenomenon to be explained is formulated. Second, a hypothetical explanation of this phenomenon is formulated. Third, one case is studied with the objective of determining whether the hypothesis is supported by the facts in that case. Fourth, if the hypothesis is reformulated or the phenomenon that need explanation is re-defined, the case is exclude. Fifth, practical certainty may be attained after a small number of cases have been examined. Sixth, this procedure is continued until a universal relationship is established, each negative case calling for a redefinition or a reformulation. Seventh, for purposes of proof, cases outside the area circumscribed by the definition are examined to determine whether the final hypothesis applies to them (cit. in (Yan and Gray 1994).

Following this procedure, this study started with one case study and compared the findings with the theoretical model in fig.1. Then, the model was modified in view of the findings in the first case. This comparative process was repeated for each successive case.

1.3 Results

Although the logic of analytic induction was strictly followed, the cases were analysed one by one in an incremental manner. Research findings on the relationships among the variables and the dynamic aspects of private labels are presented case by case in a logic proposition context.

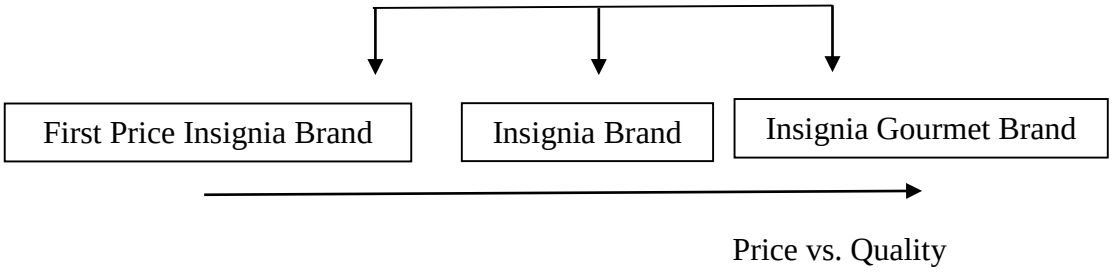
Proposition 1: The price/quality relationship of a private label product is positively related to the growth of Portuguese private label market share.

Across three interview cases (Dia Portugal, Jumbo and Pingo Doce), this study identified the relationship price/quality as the main driver of private label growth in Portugal. Therefore, managers for those private labels brands praise the price/quality of their store brands products as a very strong variable in the product mix context. One of the private label managers in a competitive duopoly situation, Pingo Doce, said the magic formula is

to have quality equivalent to the national brand leader and to have the price equal to discount stores, i.e., the best value to the consumer.

Thus, is the price a determining factor for the Portuguese, in the context of the current crisis? In the opinion of all respondents the importance of price is shared in equal proportion, with brand trust and perceived quality in it. One of the interviewees, the Modelo /Continente insignia director, claims that the price together with the quality (50% of importance for each one) are the reasons for the brand architecture of that distribution group (Sonae MC). So the architecture of Sonae MC respects three types of private labels brands. First, they have the first price brands which has the lowest price in each product category, as "É Continente" as brands names. Second, they are the insignia or store brand in the middle price position which competes against the national brand leader. Third, they are the insignia gourmet brand with the highest price and the highest perceived quality.

Figure 2: Modelo Continente Brand Architecture



However, only one of the four respondents, Dia Portugal/ Minipreço, states that the price variable is the most important variable in the consumer decision process, when considered in relative, rather than absolute terms (see Graphic 1).

Table 5: Ranking success factors of insignia brand products

Variable	Minipreço	Jumbo	Sonae MC	Pingo Doce
Prioritization of factors	1. Quality/ price relationship and brand trust 2. Crisis 3. I&D in design and attractiveness of private labels products Not the price in absolute value.	1. Price 2. Crisis 3. brand trust 4. rationality: minimalist style and attitude; Quality/price relationship	1. Crisis 2. Increase of consumer brand trust on private labels products 3. New generations attitude 4. Extending supply	1. brand trust 2. quality/ image 3. Crisis

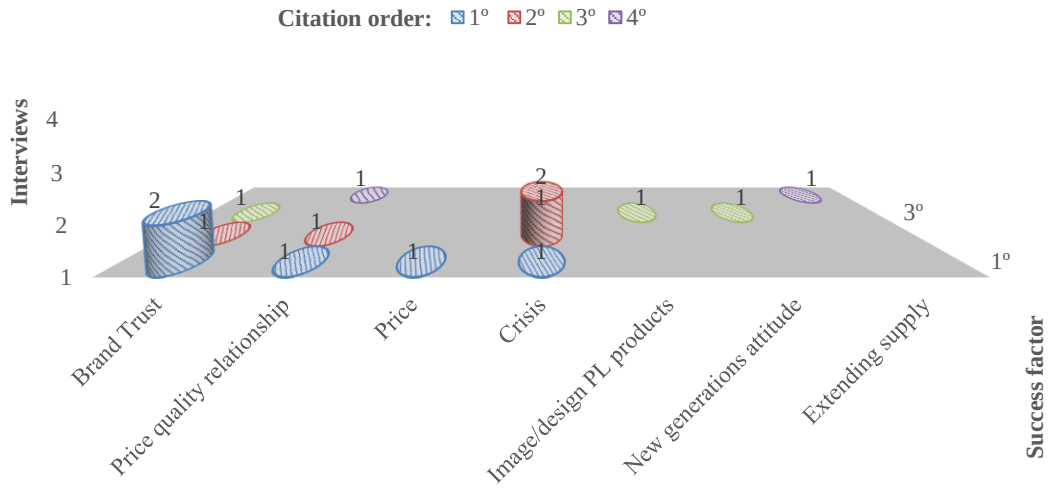
In interviews process this investigation tried to assess whether the private labels growth phenomenon and the raise of the price/ quality relationship was common to all social classes in Portugal. Unanimously all the interviewees showed that the phenomenon of store brands consumption was transversal to all social classes, with or without financial resources. In order to reinforce this statement, the Modelo Continente director cited one study: "The latest internal data indicate that 100% of customers have purchased at least once products with Private labels brands". So, we have in the Portuguese context a 100%

private labels market penetration. The Jumbo/Auchan store label director cited: “Private labels are completely cross. The Amoreiras store is frequented by people of high cultural level and there has been a growth in sales of store private products”.

Additionally, the consensus opinion was that the more informed consumers are, the more likely they have greater sensitivity and try the private label products. One of the directors interviewed, Pingo Doce, explicitly stated that "the more intelligent the consumers are, the more favourable is their option for Private labels purchases." This points out to a “smart consumer” phenomenon for the “clever behaviour” question: Why pay more if we can get the national brand quality at a lower price?

This study also note that the absolute price is not important enough, because private label products with first price only represent 2% of the 30% share of private labels in Portugal. This means that for the decision maker the price variable is not the most important issue, but the relationship price vs. quality perceived by the consumers in store brands products (see Graphic 1). The Modelo/Continente director stated that “The consumer demands a rational focus, but not at the expense of quality. It's a saving solution. The private label product is a consumer saving solution. Customers realize that insignia brand products has quality”. The Dia Portugal/Minipreço affirmed that “The price is the first factor. Not in absolute terms, because that would mean it would be an era of domination of products with first price and that's not the reality, but in a relative perspective.

Graphic 1: Success factor of the insignia brand products



In the opinion of all respondents, this relationship between the price and quality was addressed, since 2000, by each of the private labels in Portugal through a true strategic planning by the retailer. This represents a real work of insignia brand products repositioning in the Portuguese consumer's mind.

This study defends that all store grocery players have had a brilliant repositioning strategy. How to obtain a more favourable consumer opinion about the perceived quality / price ratio of insignia brands products? Change the architecture of the private label brand, as did Modelo/Continente and/or create own private labels brands with a first price positioning, as Auchan did with the Polegar own brand products.

Currently, in the Portuguese context, this study identified a change in the younger generations' attitude, which become less dependent on National Brands decision variable.

The offer itself suffered from an insignia brand extension with successive new store brand categories of products in response to consumer needs and a strengthening of confidence in the brand/consumer relationship.

Proposition 2: The exponential growth of Portuguese private labels' market share is positively associated to the consumer believe of consumer consciousness value of these brands.

Across the four cases, this investigation identified unanimous information in stating that the consciousness of private labels product value has a higher weight in the consumer's decision that overcomes economic crisis in Portugal. Jumbo director stated that "The crisis developed a consciousness of value, benefiting the growth of Private labels products". All interviewees underline this statement: "I must offer value to the consumer. So I need to have, simultaneously, the best price and the best quality to my store brand products".

This study data also provide information about the overall perception of consumer private label value consciousness. In recent years, there has been a development / enlargement of the range of store brands that Portuguese supply, with consecutive extensions of the brand insignia to new product categories. This fact was considered unanimously by all respondents as one of the dimensions of value of store brands. Consumers can now choose, in all product categories, by buying or not buying products with private label brands. In additional own packaging of Private labels products was mentioned and has been subject to constant changes in order to reinforce a positive brand image and quality through certain techniques of semiotics (colours used, type of packaging, nutritional information explicit the packaging). This positive brand image was reinforced by product certification and brand communication - at the point of sale and in the actually package of each product - which takes full advantage to the perceived consumer value of store brands products.

Proposition 3: The distinctive factor between private label users vs. non-users will be deeply associated with the class of private label product.

What are the reasons why non-users of private labels products resist insignia branded products? The interviewees suggested, unanimously, that the product category is an important factor in user option vs. non- users of insignia brand products. They confirmed

that all Portuguese buy products with private labels brands, but not in all product categories.

In this sense, there are categories that offer greater resistance to private labels penetration. Some consumers are still reluctant to purchase products with insignia brands, by stigma, that is, because they believe that these are inferior products and simultaneously attach national brands perceived quality products, quite distinct and superior. Other consumers are not users of products with insignia brands for emotional reasons, that is, for all the "emotionality" carried by a national brand. There are, in addition, consumers who are looking for a specific feature of a national brand, as the flavour of Nesquik chocolate milk brand, and they are not sensitive to try and to switch to another brand.

The insignia brands managers of the distribution sector were questioned about the product categories in which there are a greater behavioural response from consumers. One more time this study has obtained a consensual information provided by the interviewees. Within the full extension of the brand insignia categories, the basic dry groceries (milk, pasta, beans, canned goods, flour, olive oil) and the home hygiene products (washing of all, toilet paper, detergents) enjoy the greatest penetration in all insignia brand products in Portugal. However, and given the fall in purchasing power of the Portuguese, one can observe an exponential increase for the remaining product categories. If it was analysed the categories of product that even in times of crisis are more private labels resistant and, as such, with greater penetration of national brands, this investigation identified the cosmetics, perfumery (shower gel, toothpaste), Coca Cola brand, baby products (up to 1 year old) and wines. Inclusive, the category of wines, besides being the one offered greater unanimity among respondents was the only one, cited by Jerónimo Martins, Pingo Doce, as that where one notices a top leadership of national brands vs. insignia brand. This reality reflects the current perceived risk compared to products with insignia brand, being higher in social products such as wines and baby products.

1.4 Discussion

The results of this chapter challenge the assumption prevailing in the literature that Brand Equity construct is still limited to the brands which benefit from a price premium in an income brand measure perspective (Moore 1993, Keller 1998, Aaker 1991). Private labels decision makers manage insignia brand products as real assets with a positive brand equity (Li 2010). Actually, they try to improve private labels brand equity with a careful and strategic design and implementation of marketing mix variables (Yoo et al. 2000). Against previous and very recent research on retail brand equity (Jara and Cliquet 2012, Musekiwa et al. 2013), one of the most important findings of this investigation is that consumer value consciousness and consumer brand trust are the main drivers of insignia brand equity in the Portuguese context that needs to be exploited. This fact highlights the private label decision makers about the definition of the price variable of insignia brand products. They must define not the lowest price, but the one that offers the highest consumer value in the price vs. quality relationship.

Finally, results showed that the consumer perceived risk is the critical variable between private label users vs. non- users (Mieres et al. 2006) which is perceived by the consumer categories acquired. Therefore, insignia brands decision makers must mitigate this perceptual risk with their tactical and operational decisions.

The critical variables identified in this chapter will be used as a springboard for the theoretical model to be proposed in the next section of the thesis.

Chapter 2

The Insignia Brand Value construct: definition, antecedents and consequents measurement scales

2.0 Introduction

Distributor brands have often been considered as simple products targeted at a price-sensitive public and not as "brands" per se (Beristain and Zorrilla 2011). More and more their strategic focus has tended to be brand-oriented (careful packaging, higher quality, search for a differentiated identity) (Ollé and Riu 2009). As a result, they are increasingly seen by consumers as brands (Kapferer 2008). The way store identity is managed has also become more sophisticated (Floor 2006), with an enlargement to, and more precise delimitation of, the brand associations to be aroused, and increased attention on projecting that identity. Qualitative innovation, sophisticated packaging and brand extension strategies can create consumer value. This factor reflects an increased interest in brand management as a competitive weapon in the field of retailing. Therefore store brands, and more specifically, insignia brands, provide an opportunity to build retailer equity and to generate store loyalty (Mcgoldrick 2002).

Additionally, distributor brand strategies developed over the years show a systematic use of the "store". The name of the store is made to coincide with the insignia distributor brand or it is used as a support for own brands, in order to increase their equity and, consequently, the loyalty they induce (Beristain and Zorrilla 2011). Therefore, the insignia brand products poses an important challenge for retailers equity store according as the name of this products match the name of the store, representing the closest relationship with the store (Sheinin and Wagner 2003).

Because of a dearth of literature on Insignia Brand Value (IBV), this investigation first attempts to provide theoretical and practice contributions on how to conceptualize and

measure this construct.

Moreover, it will be present a set of determinants and consequents of the IBV. As they are latent variables (constructs) they will be measured by a set of scales, whose data are collected through a survey of consumers of the brands under study spread over four product categories, further discussed.

2.1 Literature Review

Literature review suggests the need to create and capitalize the value of the brands as a strategic-intangible asset, through brand equity construct (Keller and Lehmann 2003, Aaker 1996, Yoo et al. 2000). Indeed quite a few studies has yet examined this matter within the specific private labels context (Swoboda et al. 2013, Beristain and Zorrilla 2011, Jara and Cliquet 2012, Li 2010). Previous studies refer that distributor´s brands can enjoy brand equity (Wulf et al. 2005) from the retail point of sales (Jara and Cliquet 2012) and from the store image (Beristain and Zorrilla 2011).

Some authors have approached the relationship between store image and store brand equity by examining the effect of store image on consumer assessment of these brands (Semeijn et al. 2004). Some focuses on retail brand equity as a view of the value created by retail brands (Jara and Cliquet 2012) with the assumption that the cognitive process used by consumers to perceive brands is the same between retail brands and manufacturer brands. In the same direction the concept of retail brand equity (RBE) has been recently explored in the literature (Musekiwa et al. 2013). Despite constituting a valuable springboard to this research, previous literature applied the brand equity construct to the private label products (Li 2010).

Furthermore previous research (Beristain and Zorrilla 2011) analyse store brand equity and retail brand equity (Gil-Saura et al. 2013), but they do it using the same approach and the same components of brand equity in the model given in Aaker (1991). Despite the importance of branding to retailers, most academic work is devoted to a better

understanding of the competitive interaction between private labels and national or manufacturers´ brands at perceived risk level, brands and non-brands users, competitive position, price competitive policies (Ho et al. 2011) and attitudes constructs (see Table 1).

Against previous research this investigation argues that the value of insignia brand products must be conceptualized and, consequently, measured in an independent way from the others store or private labels typology and from national brands. This work provides that the Insignia Brand Value construct matches the economic and functional benefits, depending upon the consumer attitude to the brand store. This is the reason why the name is Insignia Brand Value and not insignia brand equity. Brand Equity is originally specific of the national brands domain. Indeed, Brand Equity construct has a strong emotional and intangible dimension, a greater marketing "savoir-faire" as well as an ability to put a price-premium (Steenkamp et al. 2010). In fact, all the four Brand Equity dimensions proposed by Keller (1993) and Aaker (1991, 1996) - namely: brand awareness, brand associations, brand perceived quality and brand loyalty- are incorporated in the insignia brand, but for rather different and inverse reasons. For instance, in the insignia brands context there is a rational dimension to the detriment of an emotional dimensional, by the consumer, which enables the creation of the Insignia Brand Value construct.

2.2 Methodology

2.2.1 Sample and Data Collection Procedures

A first pilot test questionnaire was designed to enable this study revise some formulation item set. It was conducted on May of 2013, in a convenience sample including students of a marketing master class, academics and managerial experts of a retail store. Each person, in a total of 50 pre-tests obtained, was invited to answer, to identify any problem with the questionnaire and to modify the formulation and the words of the items to fit a better question comprehension (example: the negative vs. positive item formulation).
According with this feedback, several modifications had been introduced. In order to test

the construct scales of measure (structural model), a survey-based procedure has been used, by intercepting consumers to collect data. The survey was applied to different retail formats of distribution chains in Portugal, and covered hard discount, hypermarket and supermarket retail chains. It was developed 12 versions of the questionnaire for the three insignia brands surveyed in four product categories. Across versions, this research, maintained the same format and order of question items.

The survey was conducted in August and September of 2013. A total of 3200 questionnaires were carefully administrated by digital form to have a better control by the representation of the sample. This study wants to assure that all respondents are customers/clients of the respective retail chain and users of insignia brand products to avoid a skew cognitive. For that this investigation used a proportional representative sample looking for insignia brand market of share in the portuguese market. For each brand chain, their clients were invited to answer the questionnaire. Continente insignia brand has a database marketing and send by email to their customers. Dia/minipreço put the questionnaire link in the official institutional page of facebook and the Pingo Doce retail stores place and communicates that in the institutional site. The prior knowledge about insignia brand consumer decision process brought to the first chapter has led to test the model in the four product categories- Cleaners home, basic grocery, drinks and cosmetics and perfumery. The reason for choosing these products lies in the desire to avoid particularising the results to one specific product category and matching a more precisely and focus answer context. Additionally, these two first categories are the most representative of the penetration of insignia brand products and the last two are the ones that have the lowest penetration rate in Portugal.

Since the Elementary category / primary education, only amounted to 1.5% of the total sample, it will therefore be grouped with the alternative basic education, becoming exclusively designated as Basic education.

In addition, it is worth noting that the specific question on the income was not allowed to feature in one of the insignia brands under analysis in this investigation, since the retail store refused to do so. Moreover, whereas questions concerning the seven constructs were

of compulsory answer, the responses to the social demographic and income descriptive variables were optional.

The sample characteristics, exhibited in Table 6, match the profile of consumers of insignia brands, suggested on the information obtained in the in-depth interviews, from the first investigation carried out in this thesis. The open questions answers concerning age and household composition number were grouped into categories according to the suggested decision makers' interviews and secondary information originated from the Nielsen consumer panel.

Table 6: Characteristics of the sample (N = 3200)

		Insignia Brands			**Total**
Variable	**Category**	**Continente (N)**	**Pingo Doce (N)**	**Dia/ Minipreço(N)**	
Gender	Female	659	1405	274	2338 (77%)
	Male	370	277	50	697 (23%)
Age	≤ 25	33	267	88	388 (13%)
	26-50	916	1284	217	2417 (80%)
	≥ 51	73	130	19	222 (7%)
Civil status	Married	573	760	101	1434 (47%)
	de facto relationship	188	354	86	628 (21%)
	Single	188	454	116	758 (25%)
	Divorced	74	98	17	189 (6%)

		Insignia Brands			Total
Variable	**Category**	**Continente (N)**	**Pingo Doce (N)**	**Dia/ Minipreço(N)**	
	Widowed	8	18	3	29 (1%)
Household Number	≤ 2	333	541	118	992 (36%)
	3-5	532	970	171	1673 (61%)
	≥ 6	12	53	15	80 (3%)
Education	Basic	135	234	77	446 (15%)
	Secondary	468	593	142	1203 (40%)
	University	427	849	106	1382 (45%)
Household income	< 500	10	-	43	53 (4%)
	501-1000	292	-	126	418 (31%)
	1001-1500	271	-	97	368 (28%)
	1501-2000	207	-	33	240 (18%)
	> 2000	236	-	19	255 (19%)

2.2.2 Measurement

The variables in the questionnaire are proposed constructs, i.e., they are not directly observable, so it is necessary to clarify the dimensions and scales used in its definition and interpretation.

All the constructs of the study were measured with multiple, seven-point, Likert-type scale (1= Strongly disagree to 7= Strongly agree), adapted from published scales to fit the portuguese insignia brand context (see Table 7 for the specific items). The scale proposed

by Burton et al. (1998) was revised and adapted to measure consumer store attitude. This scale has been replicated and validated in subsequent studies, including Ailawadi et al. (2001), Garretson et al. (2002), Jin and Suh (2005) and Gómez and Rubio (2010). Brand trust was measured with four items proposed by Chaudhuri and Holbrook (2001) and two items adapted from the store brand trust scale proposed by Gómez and Rubio (2010). Value consciousness was measured by a seven-item scale adapted from Churchill (1979). Consumer perceived risk was measured with eight items based on scales adjusted from Liljander et al. (2009). Brand loyalty scale is drawn by four items adjusted from Chaudhuri and Holbrook (2001) and from Gómez and Rubio (2010). Although there are distinct and varied contributions to the conceptualization and measurement of brand satisfaction, the most suitable proposal for this study is the consideration of satisfaction as a combination of hedonic values and an effective "word of mouth" of the insignia brand products. The scale was adapted from Oliver (1997) and later used by Hellier et al. (2003) (see Table 7).

Table 7: Constructs and Their Measurement Items

Construct	Measurement Items
Consumer Store Attitude (SA)	• I love it when store brand X are available for the product categories I purchase. • I always consider the possible acquisition of insignia brand X when I go shopping to store brand X. • For most product categories, the best buy is usually the insignia store brand X. • Considering value for money, I prefer buying products of store brand X. • When I buy the insignia brand products, I always feel that I am getting a good deal.

Construct	Measurement Items
Brand Trust (BT)	• With the store brand X, I get what I am looking for. • The X product brand always meet my expectations. • The products of brand X provide me security and peace of mind when I use them. • These products brand never let me down • This is an honest brand. • This brand is safe.
Consumer Perceived Risk (CPR)	*Social risk* • A X'Store Brand's product would not fit in with my self-image. • Purchasing a 'Store Brand' would be risky, because my friends, relatives and colleagues would not approve of it. • Purchasing a 'Store Brand' would be risky, because others would think less highly of me *Functional risk* • In general I think it is risky choose the products with brand X. • In my specific case it is risky choose the products with brand X. • I think it's risky to choose the products with brand X not match the other products I use.

Construct	Measurement Items
	Financial risk • I feel like I'm losing money when buying an insignia brand product rather than a national brand product. • I think it is financially risky choose the branded products X.
Value Consciousness (VC)	• I am very concerned about low prices, but I am equally concerned about product quality. • When grocery shopping, I compare the prices of different brands to be sure I get the best value for the money. • When purchasing a product, I always try to maximize the quality I get for the money I spend. • When I buy products of brand X, I like to be sure that I am getting my money´s worth. • I generally shop around for lower prices on products, but they still must meet certain quality requirements before I will buy them. • When I shop, I usually compare the "price per Kg/Lt" information for brands I normally buy. • I always check prices at the grocery store to be sure I get the best value for the money I spend.

Construct	Measurement Items
Brand Loyalty (BL)	• I will buy X brand next time I purchase this product category. • I intend to continue to buy the X brand in this product category. • If I obtain a product free of this product category, I would choose the X brand. • It makes sense to buy X brand even though there are other manufacturer brands of equal quality and price.
Brand Satisfaction (BS)	• My decision to purchase X brand products is a wise one. • I feel good about my decision to purchase the X brand products. • In general I am pleased with X brand products. • The X brand products fall below of expectations. • X brand products match my ideal product. • I would positively recommend the X brand products to other people.

The Insignia Brand Value scale is a new contribution to the dearth in the literature and it was measured with a ten-item scale proposed in this investigation (see Table 8). In this

case it was used the procedures suggested in the literature of marketing scales measures (Churchill 1979). It was conducted in-depth interviews with four distribution brand managers of retailers store in Portugal to better understand how these experts conceptualize and measured this construct. Firstly, it was asked to enhanced in a spontaneously way about words, ideas or phrases associated to the insignia brand products and value. Secondly, recognition or rejecting of a set of associations given to the experts in this exploratory research. Additionally it was carried out a brainstorming in a master class including insignia brand consumers and product brand managers about how they described the value of the insignia brand products.

Table 8- Insignia Brand Value development scale and their measurement items

Insignia Brand Value (IBV)	• When I buy a X brand product I believe that I'm so well served (o) as if I bought a brand manufacturer. • I value the saving made when I buy X branded products. • I feel proud when I purchase X brand products. • I feel good for having bought this store brand. • The X brand meets the desired functions. • The X brand meets my expectations. • The X brand gives me the same quality assurance of a national brand. • With X brand products I´m able to fill up more my shopping Cart. • I am a smart consumer to buy the X brand. • The X brand helps me to save.

After a Varimax rotation, just only one component was extracted. So the Insignia Brand Value is a unidimensional scale composed by 10 items. The total of variance explained is around 75,667%.

2.2.3 Model Fit Evaluation

To test the theoretical model proposed in this study a first analysis was conducted of the measurement model (Hair et al. 2010). The measurement model sample included all survey respondents (N= 3200). The collected empirical data were processed using AMOS 21 software and the models tested in this study were estimated using maximum likelihood (ML) estimation method.

Reliability and validity issues were addressed using such methods as exploratory factor analysis, reliability analysis, and convergent validity tests including first and second order models of the determinants of Insignia Brand Value. The goodness-of-fit of the models was assessed through a number of indices, the first being a chi-square ($\chi 2$) test. Chi-square is known to be extremely sensitive to sample size, meaning that with larger samples, even reasonable models are likely to produce statistically significant chi-square p values. In these cases, analysis of the ratio of chi-square to the degrees of freedom as well as other fit indices is recommended. For this reason the ratio of the chi-square to degrees of freedom will be reported. One absolute fit indice - the root mean square error of approximation (RMSEA) and the non-normed fit index (NFI) will be also reported. Finally, it will be used an incremental fit index, namely the Comparative Fit Index (CFI), which is particularly sensitive to complex model specification.

Satisfactory model fits are indicated by nonsignificant chi-square tests, RMSEA value $\leq$ .06 and CFI and NFI values $\geq$ .90 (Hair et al. 2010, Hu and Bentler 1999).

In examining the estimates of standardized regression weights it was observed a statistically no significant discrepancy (β= -.095 and p=.128) in a negative loading of "B.Satisf.4" measure with its underlying construct, brand satisfaction. Additionally the reliability assessment of this scale, using Cronbach's alpha, revealed an improvement of subscale α if the "B.Satisf.4" item was deleted namely (Content: "The X brand products

fall below of expectations.”). Consequently, this study will exclude “B.Satisf.4” from further analysis.

Subsequent analyses of modification indices (M.I), factor loadings and error covariances for the sample, indicated the addition of some new parameters. Whereby it was established some error covariances between the residual errors with the major M.I. values, in order to led to a substantial increase in model fit.

2.3 Results

The measurement model validity depends on (1) establishing acceptable levels of goodness-of-fit for the measurement model and (2) finding specific evidence of construct validity (Hair et al. 2010).

To test the internal consistency of the measurement scales, a reliability analysis was conducted for each distinct dimension. For all seven latent constructs, the coefficient alphas (Cronbach 1951) exceeded the suggested 0.80 level mentioned in the literature which are indicative of good internal consistency and therefore validates the psychometric quality of this investigation scales (see Table 9). The reliability coefficients ranged from 0.813 to 0.963.

Table 9: Cronbach´s reliability analysis

Construct	Author	Items N.	Cronbach´s α
Consumer Store Attitude (SA)	Burton et al. (1998) and later used by Ailawadi et al. (2001), Garretson et al. (2002), Jin and Suh (2005) and Gómez and Rubio (2010).	5	**.897**

Construct	Author	Items N.	Cronbach´s α
Brand Trust (BT)	Chaudhuri and Holbrook (2001) and Gómez and Rubio (2010).	6	**.951**
Insignia Brand Value (IBV)	Own source	10	**.963**
Consumer Perceived Risk (CPR	Liljander, Polsa et al. (2009)	8	**.945**
Value Consciousness (VC)	Churchill (1979)	7	**.813**
Store Brand Loyalty (SBL)	Chaudhuri and Holbrook (2001)	4	**.893**
Brand Satisfaction (BS)	Oliver (1997) and later used by Hellier et al. (2003).	5	**.856**

The results of exploratory factor analysis (component analysis) associated to the measurement model, demonstrated a clear factorial structure and consequently, the unidimensionality of the constructs analysed– store brand attitude, brand trust, value consciousness, consumer perceived risk, Insignia Brand Value, brand satisfaction and brand loyalty (see table 10).

Table 10: Exploratory factor analysis (principal component analysis)

Construct Loading Factor	SA	BT	CPR	VC	IBV	BS	BL
SA1	**.788**						
SA2	**.797**						
SA3	**.842**						
SA4	**.899**						
SA5	**.903**						
BT1		**.802**					
BT2		**.914**					
BT3		**.938**					
BT4		**.941**					
BT5		**.878**					
BT6		**.907**					
CPR1			**.716**				
CPR2			**.826**				
CPR3			**.842**				
CPR4			**.918**				
CPR5			**.916**				
CPR6			**.875**				
CPR7			**.899**				
CPR8			**.911**				

Construct Loading Factor	SA	BT	CPR	VC	IBV	BS	BL
VC1				**.512**			
VC2				**.810**			
VC3				**.807**			
VC4				**.771**			
VC5				**.645**			
VC6				**.605**			
VC7				**.826**			
IBV1					**.833**		
IBV2					**.832**		
IBV3					**.866**		
IBV4					**.908**		
IBV5					**.925**		
IBV6					**.923**		
IBV7					**.888**		
IBV8					**.778**		
IBV9					**.898**		
IBV10					**.836**		
BS1						**.921**	
BS2						**.942**	
BS3						**.941**	
BS5						**.893**	

Construct Loading Factor	SA	BT	CPR	VC	IBV	BS	BL
BS6						**.926**	
BL1							**.926**
BL2							**.918**
BL3							**.812**
BL4							**.860**
Eigenvalue	**3.588**	**4.837**	**5.989**	**3.626**	**7.567**	**4.276**	**3.100**
% of Variance	**71.761**	**80.619**	**74.861**	**51.801**	**75.667**	**85.517**	**77.496**

Additionally, there are high and very significant correlations among the seven constructs (see Table 11).

Table 11: Correlations among the seven latent constructs of the determinants and consequents of the Insignia Brand Value

Constructs		Correlations	S.E.	C.R.	p
Consumer Store Attitude	Brand Trust	0.736	0.018	24.446	***
	Consumer Perceived Risk	- 0.383	0.016	-16.768	***
	Value Consciousness	0.371	0.007	13.968	***
	Insignia Brand Value	0.744	0.022	25.285	***
	Brand Loyalty	0.636	0.022	24.506	***
	Brand Satisfaction	0.716	0.020	25.403	***

Constructs		Correlations	S.E.	C.R.	p
Brand Trust	Consumer Perceived Risk	-0.442	0.029	-19.327	***
	Value Consciousness	0.398	0.013	14.958	***
	Insignia Brand Value	0.876	0.040	29.656	***
	Brand Loyalty	0.817	0.042	30.490	***
	Brand Satisfaction	0.858	0.037	30.282	***
Consumer Perceived Risk	Value Consciousness	-0.217	0.013	-9.860	***
	Insignia Brand Value	-0.482	0.036	-20.805	***
	Brand Loyalty	-0.455	0.040	-20.590	***
	Brand Satisfaction	-0.490	0.035	-21.334	***
Value Consciousness	Insignia Brand Value	0.417	0.017	15.480	***
	Brand Loyalty	0.385	0.018	15.074	***
	Brand Satisfaction	0.393	0.016	15.101	***
Insignia Brand Value	Brand Loyalty	0.868	0.051	32.948	***
	Brand Satisfaction	0.953	0.047	33.227	***
Brand Loyalty	Brand Satisfaction	0.887	0.048	34.554	***

Note: *** $p < 0.001$

Convergent validity was determined from the measurement model by examining whether each indicator´s estimated loading on its posited underlying factor was large.
The measures in the resulting measurement model showed acceptable convergent validity, with each measure being significantly related to its underlying factor.

The results suggests that the model fit the data well (CFI and NFI higher than 0.9 and

RMSEA lower than .06) in the sense that the hypothesized model adequately described the sample data. The goodness-of-fit statistics for the measurement model are as follows: CMIN/DF = 10.510, CFI= .945, NFI= .939 and RMSEA= .055. The RMSEA with the 90% confidence interval ranging from .054 to .056 which represents a good degree of precision. The CFI value > .90 was originally considered representative of a well-fitting model and a revised cut-off value close to .95 has recently been advised. Between the CFI and NFI, the CFI should be the index of choice.

Except for the value consciousness construct, all latent variables exhibited indices above the reference values of the composite reliability index (ρ_c) and the variance extracted (ρ_v) (see Table 12). Composite reliability (CR) and variance extracted (AVE) fell above the 0.7 and 0.5 threshold, respectively, representing a high degree of shared representation of the indicators with the construct. In additional for all the constructs the CR index are above the AVE index.

Table 12: Composite Reliability Index (ρc) and Variance Extracted (ρv) for the Measurement Model of Insignia Brand Value

Construct	Composite Reliability Index (CR) (ρ_c)	Average Variance Extracted (AVE) (ρ_v)
Consumer Store Attitude (SA)	.89	.64
Brand Trust (BT)	.95	.76
Consumer Perceived Risk (CPR)	.95	.70
Value Consciousness (VC)	.84	.45
Insignia Brand Value (IBV)	.96	.71
Brand Loyalty (BL)	.89	.69
Brand Satisfaction (BS)	.96	.82

Discriminant validity was established by determining that the square root of average variance extracted (AVE) from each latent variable´s measure was larger than its shared correlation with any other variable (Hair et al. 2010) (see Table 13).

----Table 13: Discriminant validity for the measurement model

AVE	Latent Variables	SA	BTrust	CPR	VCons	IBV	Bloyalty	Bsat
0,64	SA	**0,80**						
0,76	BTrust	0,74	**0,87**					
0,70	CPR	-0,38	-0,44	**0,84**				
0,45	VCons	0,37	0,40	-0,22	**0,67**			
0,71	IBV	0,74	0,87	-0,48	0,42	**0,84**		
0,69	Bloy	0,64	0,82	-0,46	0,39	0,87	**0,82**	
0,82	Bsat	0,72	0,86	-0,49	0,39	0,95	0,88	**0,90**

From the Table 13 this study conclude that, in nearly all cases, the scales met the criterion mentioned previously, again suggesting that almost the measures of constructs in the measurement model achieve discriminant validity and differentiated factors (Fornell and Larcker 1981). Construct validity is the extent to which indicators of a construct measure what they are purported to measure (Bagozzi and Yi 2012).

This is not the case, however, in the variable pairs “Insignia Brand Value” and “Brand Loyalty”, “Insignia Brand Value” and “Brand Satisfaction” and “Insignia Brand Value” and “Brand Trust”. The Insignia Brand Value scale presents a square root of the AVE less than its correlation coefficients with the brand loyalty, brand satisfaction and brand trust measures. Firstly, this could be justified by a statistical point of view. As it was point out in Table 11, Insignia Brand Value presents a very high correlation with both brand loyalty

and brand satisfaction constructs as either with the brand trust construct. Secondly, there is a theoretical and conceptual reason for these results. The Insignia Brand Value (IBV) it was defined, in this investigation, as an expression of the value of the insignia brand products of each one of the retailers brands here presented. So this could be representative of a more evaluative, consequence or outcome construct such as both brand loyalty and brand satisfaction constructs.

For this reason, this investigation have estimated an alternative model by setting the correlation between these three pairs of variables at 1 (Anderson and Gerbing 1988). The test of Chi-Square differences, between the unconstrained and the constrained model, indicates a significantly poorer fit in this case ($\Delta\chi^2 = 2248.758$; $p < .001$; ΔCMIN/DF = 2.347; Δ RMSEA = 0.006; Δ CFI = - 0.015), thus corroborating the existence of discriminant validity.

Additionally it was take it in account the last goodness-of-fit statistic appearing on the AMOS output, (Hoelter 1983) Critical N (CN) (albeit labeled as Hoelter's .05 and .01 indices) which is a fit index independent of sample size. Both the .05 and .01 CN values for our hypothesized model were > 200 (329 and 339, respectively). Interpretation of this finding, then, leads this investigation conclude that the size of this sample (N = 3200) was satisfactory according to Hoelter's benchmark that the CN should exceed 200.

2.4 Discussion

The need to measure and capitalise the value of the brands is something crucial in the field of insignia brand products. These brands are regarded as prime competitive trends from the national brands. Moreover, Insignia brand products are increasing their market share with a growing potential for achieving more power in the retail context.

Within this chapter, an original construct of Insignia Brand Value is advanced that contemplates the measuring and the validation of this new concept.

The primary data hereby produced corresponds to a large sample dimension of 3200 questionnaires collected from store brands consumers. Indeed, this empirical research carried out in the Portuguese retail sector includes three of the four retail brand stores which have insignia brand products and as well as contemplates four product categories. This sample was particularly constituted by female adults married with a university education and the vast of majority of them having a household income higher than € 1000.

Moreover the proposed new latent construct had an excellent reliability value (Cronbach´s α = .963) and represented a desired unidimensional scale which is composed by 10 items with a total of variance explained around 75.667%.
This good reliability result was extended to the others constructs. Thereby, for all seven latent constructs, the coefficient alphas (Cronbach 1951) exceeded the suggested 0.80 level mentioned in the literature which are indicative of good internal consistency and therefore validates the psychometric quality of this investigation scales. The reliability coefficients ranged from 0.813 to 0.963.

The results of the exploratory factor analysis (component analysis) associated to the measurement scales, demonstrated a clear factorial structure and consequently, the unidimensionality for all the constructs analysed– store brand attitude, brand trust, value consciousness, consumer perceived risk, Insignia Brand Value, brand satisfaction and brand loyalty. Moreover, the correlations among the seven constructs are high and very significant.

The findings suggested acceptable convergent validity. Additionally, demonstrated that the model fit the data well (CFI and NFI higher than 0.9 and RMSEA lower than .06) in the sense that the hypothesized model adequately described the sample data. The goodness-of-fit statistics for the measurement model are as follows: CMIN/DF = 10.510, CFI= .945, NFI= .939 and RMSEA= .055. The RMSEA with the 90% confidence interval ranging from .054 to .056 which represents a good degree of precision.

Almost the measures of the constructs in the measurement model achieve discriminant validity and differentiated factors (Fornell and Larcker 1981). This is not the case,

however, in the variable pairs “Insignia Brand Value” and “Brand Loyalty”, “Insignia Brand Value” and “Brand Satisfaction” and “Insignia Brand Value” and “Brand Trust”.

Firstly, this could be justified by a statistical point of view. Insignia Brand Value presents a very high correlation with both brand loyalty and brand satisfaction as either with the brand trust construct. Secondly, there is a theoretical and conceptual reason for these results. The Insignia Brand Value (IBV) it was defined, in this investigation, as an expression of the value of the insignia brand products of each one of the retailers brands here presented. So this could be representative of a more evaluative, consequence or outcome construct such as both brand loyalty and brand satisfaction constructs.
However, this investigation had estimated an alternative model by setting the correlation between these three pairs of variables at 1 (Anderson and Gerbing 1988). The test of Chi-Square differences, between the unconstrained and the constrained model, indicated a significantly poorer fit in this case ($\Delta\chi^2 = 2248.758$; $p < .001$; ΔCMIN/DF = 2.347; Δ RMSEA = 0.006; Δ CFI = - 0.015), thus corroborating the existence of discriminant validity.

From these results, this study can conclude that the hypothesized measurement model fits the data well. Thus, having established confidence in the measurement model, following it will be estimate the structural model testing the hypothesized structural relationships further discussed in Chapter 4.

Chapter 3

The Insignia Brand Value: A Social Demographic Profile

3.0 Introduction

The influence of demographic factors as, family size, income, education and age, on the generic and distributor´s brands consumers were examined in past studies (Herstein and Tifferet 2007).

In this research, a more detailed analysis of the consumers of insignia brand product was carried out, in order to better understand and categorize them as well as to create a social demographic profile.
Specifically, this investigation performed a ANOVA statistical test, to compare the mean score of the new latent and dependent variable, i.e., Insignia Brand Value. It was achieved by testing it amongst six independent groups (gender, age, civil status, household number, education and household income), and across three retail formats in Portugal-hypermarket, supermarket and hard discount. Moreover, this investigation examined the differing effect of one independent variable on the dependent variable, depending on the particular level of another independent variable, i.e., the interaction effect.
Additional, either a Mann-Whitney or a Kruskal-Wallis was performed as a nonparametric statistic test, to compare each one of those variables on the Insignia Brand Value.

Lastly, to identify the socio-demographic and economic determinants of IBV was also used simple binary LOGIT models with one explanatory variable and multivariate binary LOGIT models (several explanatory variables simultaneously) contemplating the six explanatory variables considered in this investigation.

3.1 Group differences

Parametric and non-parametric statistic tests were used to compare groups and analyze if there are statistically quantitative differences among the consumer descriptive variables on the Insignia Brand Value. In both analyses the cut off p value decision was the common $p< 0.05$ or, when applicable, either the $p< 0.10$ or $p< 0.01$.

Table 14: Statistical indicators of group differences

Independent Variables		Insignia Brand Value					
		Hypermarket		Supermarket		Hard-discount	
		Mean	SD	Mean	SD	Mean	SD
Gender	Male	5.6416	1.07799	5.6697	1.47280	5.6380	1.39004
	Female	5.5778	1.26916	6.0315	1.11937	5.9350	1.17318
Age	≤ 25	5.2000	1.33744	5.9933	1.05902	5.7386	1.28845
	26-50	5.5991	1.19044	5.9519	1.22188	5.9078	1.19714
	≥ 51	5.8904	1.23717	6.2162	1.05396	6.3737	.87040
Civil status	Married (o)	5.6791	1.17647	6.0713	1.17643	5.9485	1.18039
	De facto union	5.5117	1.13556	5.9418	1.20368	6.0453	1.21768
	Single	5.4543	1.28268	5.8269	1.21142	5.6578	1.28104
	Divorced / Separated	5.5973	1.29276	6.0918	.98417	6.0588	.79926
	Widow (o)	5.4875	1.8589	6.2333	.93116	6.2667	1.10151
Household number	< 2	5.4547	1.28793	5.8499	1.24767	5.5856	1.49428
	3-5	5.7092	1.12121	6.0158	1.17583	5.9965	1.02859
	> 6	5.7000	.90151	6.0000	1.37071	6.5067	0.50493

Independent Variables		Insignia Brand Value					
		Hypermarket		Supermarket		Hard-discount	
		Mean	SD	Mean	SD	Mean	SD
Education	Basic	5.9556	1.21672	6.4453	0.91220	6.1312	1.24882
	Secondary	5.6402	1.16290	6.0642	1.07917	6.0169	1.07142
	Higher	5.4431	1.21577	5.7869	1.27745	5.5245	1.29621
Household income	< 500	5.3900	.94687	-	-	6.2907	.94006
	501-1000	5.6103	1.20775	-	-	5.8516	1.12184
	1001-1500	5.6303	1.24075	-	-	5.9918	1.24613
	1501-2000	5.7261	1.16619	-	-	5.5242	1.43070
	> 2000	5.4602	1.19753	-	-	5.2842	1.46790

3.1.1 Insignia Brand Value gender comparison across different retail formats

A 3 (retail format) x 2 (gender) ANOVA was held to determine if the different consumers grouping from retail format and gender has differently perceived the Insignia Brand Value. When respondents were divided regardless of their gender, a statistical difference was observed in the Insignia Brand Value according to the retail format ($F_{(2, 3029)} = 9.710$, $p < .001$) and the gender ($F_{(1, 3029)} = 7.717$, $p < .05$). Moreover, the results revealed a statistical difference in the interaction retail format x gender ($F_{(2, 3029)} = 7.746$, $p < .01$). This represents an important result to the private labels managers. Insignia Brand products have a distinctive consumer perception of their value according to the gender (female or male). Additionally, the interaction between the gender variable and the consumer retail format is different depending to the hypermarket, supermarket or hard discount´s consumers retailing typology.

The Mann-Whitney, nonparametric test, also revealed a statistical difference ($p < .001$) among the gender groups on the Insignia Brand Value.

3.1.2 Insignia Brand Value age comparison across different retail formats

Next, this investigation performed a 3 (retail format) x 3 (age) ANOVA on the Insignia Brand Value. The ANOVA results showed that the consumers´ perception of the Insignia Brand Value statistically differed among the consumer age ($F_{(2, 3018)} = 7.101$, $p < .05$). Moreover, this investigation examine whether this outcome remained consistent when it crossed both, consumer age and the different retail formats. In contrast, the results revealed that the interaction between retail format typology and the consumer age of respondents on the Insignia Brand Value was not significant ($F_{(4,3018)} = 1.341$, *ns*).

The result of an additional, Kruskal-Wallis nonparametric test, confirmed a significant difference ($p < .001$) on the Insignia Brand Value among the different consumer groups age.

3.1.3 Insignia Brand Value civil status comparison across different retail formats

A 3 (retail format) x 5 (civil status) ANOVA was hold. The results identified that the Insignia Brand Value significantly differs according to the consumer civil status ($F_{(4,3023)} = 3.980$, $p < .01$). Nevertheless, the effect of retail format x civil status was not significant ($F_{(8, 3023)} = .476$, *ns*).

This significant comparison group was also validated by the Kruskal-Wallis statistical test ($p < .01$) which confirmed that the Insignia Brand Value differed among the consumer civil status.

3.1.4 Insignia Brand Value household number comparison across different retail formats

A 3 (retail format) x 3 (household number) ANOVA was realized to comparing the impact of the household composition on the Insignia Brand Value.

The results displayed a significant difference ($F_{(2,2736)} = 12.159$, $p < .001$). This amounts to an important result from this research, which will be further developed ahead under the post-hoc analysis in this chapter.

This finding was kept consistent when applied the Kruskal-Wallis test which results have confirmed that there are a statistical difference ($p < .001$) on the Insignia Brand Value depending upon the household number.

Nevertheless, the interaction between the household number of members and the three retail formats was not significant ($F_{(4, 2736)} = 1.425$, *ns*).

3.1.5 Insignia Brand Value consumer education comparison across different retail formats

From a 3 (retail format) x 3 (education) ANOVA a comparison of the inquired consumers education with the perceived and assigned to Insignia Brand Value proved to be significant ($F_{(2, 3022)} = 32.679$, $p < .001$). On the contrary, the interaction between the retail format and education levels is not significant ($F_{(4, 3022)} = 1.075$, *ns*).

An after, Kruskal-Wallis test unveiled a significant ($p < .001$) difference on the Insignia Brand Value from the consumer education levels.

3.1.6 Insignia Brand Value consumer household income comparison across different retail formats

After performing a 2 (retail format) x 5 (household income) ANOVA**,** the results indicated that, marginally, the household income has not a statistically impact on the Insignia Brand Value ($F_{(4,\ 1324)}$ = 2.147, p≅.073). Additionally, the interaction of household income across both the hypermarket and hard discount retail formats was also not significant ($F_{(4,\ 1324)}$ = 2.256, p≅.056) marginally so.

A subsequent Kruskal-Wallis test had confirmed that the consumer household income has a statistically difference impact on the Insignia Brand Value (p< .001).

3.1.7 Post hoc analysis

Since main effects or the interactions were significant, proving that differences exist among the means, follow-up comparisons were conducted.

Further Post hoc analysis was performed to identify a more detailed and sensitivity comparison among the descriptive variables and consequent statistical impact on the independent variable, Insignia Brand Value. More concretely, post hoc pairwise multiple comparisons enable determined which means differ and to test the difference between each pair of means.

A ANOVA was once again employed. The analysis performed within the retail universe revealed statistical differences with a considerable impact on the Insignia Brand Value. The results showed a significant difference in terms of the consumer point of view between the comparison pairs, namely: hypermarket vs. supermarket Insignia Brand Value (p< .001) and hypermarket vs. hard-discount Insignia Brand Value (p< .01). There was no important contrast, however, between the supermarket consumers vs. hard discount consumers.

With respect to the comparisons made among the different age levels and consequent

impact on the Insignia Brand Value, the results showed a significant difference between the consumers aged 26-50 and the group of mature consumers (≥ 51) ($p < .01$). The oldest consumers of hypermarket, supermarket and hard-discount, perceived and attached a more high value to the insignia brand products (see Table 14). Previous research found that consumers aged 26-55 constitute the age group of the new generic brand consumers, due to the difficult economic situation (Herstein and Tifferet 2007).

The difference between the youngest (≤ 25) and the oldest consumers (≥ 51) is statistical significant ($p < .05$) and it was still qualitative noteworthy since the latter valued more to the insignia brand products. Furthermore, the different impact on Insignia Brand Value from both younger consumers and the 26-50 consumers was not significant ($p \cong .711$).

Concerning to the different civil status on the Insignia Brand Value, the results suggested a statistical significance difference between the married and the single consumers ($p < .01$). The hypermarket, supermarket and hard-discount portuguese married consumers, perceived a large value to the insignia brand products than the single consumers. Furthermore, the single consumers of all format retailing are the civil status category with the lowest Insignia Brand Value. This is once again a major finding to the private label decision makers.

Regarding the household number a statistical difference was found both between the small (≤ 2) and the largest families (≥ 6) ($p < .05$) as well as the small one and 3-5 family members number on the Insignia Brand Value ($p < .001$). There is a direct proportional relationship between the number of household and the perception of the Insignia Brand Value (see Table 14). The larger the size of the household, the greater the value associated with the insignia brand products. This result is to be expected in the sense that larger families tend to spend greater amounts of consumer goods and consequently become more prone to insignia brand products. In addition, within the context high spending families, insignia brand purchasing assumes a critical priority in order to minimize their consuming burden.

Although the lack of published studies in the specific domain of this investigation-

Insignia Brand Value - the discussion of the present results will resort to the private and generic brands literature. Consequently, this investigation is in line with previous findings of studies on generic brands which posit that consumers with large families tend to buy generic products (Herstein and Tifferet 2007).

In what regards the consumer household income, the results suggested but a statistical difference between the lowest (< 500) and the highest (> 2000) household income comparison pair ($p < .01$) on the Insignia Brand Value. Bigger qualitative differences, however, were also displayed across the remaining consumer retail format universe. Whereas insignia brand products had more value to hypermarket consumers with higher income, in the case of hard discount consumers, on the contrary, the insignia brand value is highest when they have the lowest (< 500) income (see Table 14). This makes sense to the extent that it could be argued that within in the hypermarket context, consumers with highest income have more access to information or tend to be more knowledgeable about the insignia brand quality and, therefore, attach more value to those products. Moreover insignia brand quality products allow for an additional saving and trigger a rational acquisition process prompted by the economic crisis context. In the case of the hard discount context, consumers with the lowest income assign a superior value in view of their lack of purchase alternative options. In alternative, it could also be the case that they are pleased with the insignia brand products.

Previous research found conflicting results regarding the income of generic consumers. Some of those concluded that the income was low (Prendergast and Marr 1997), while others signaled an average income or an above-average income (Herstein and Tifferet 2007).

With respect to the consumer education level, this investigation found a significant statistical difference ($p < .001$) among all multiple comparisons made across the elementary, secondary and higher education on the Insignia Brand Value, across all distribution´s retail format. In the hypermarket context, this study showed quite clearly that the highest Insignia Brand Value is attached to the basic education consumer level. This result is against earlier research on generic products (Herstein and Tifferet 2007) and

is to be expected since consumers with a basic education recognize the highest value of the insignia brand products. Additionally, in both supermarket and hard discount context, consumers with the superior education level perceived a lower Insignia Brand Value, suggesting the idea of a stigma towards the insignia brand products. Moreover, it could also be explained by a consumer association with a basic functional feature related to the insignia brand products.

3.2 Binary Logit function

The binary logit models are characterized by the use of a qualitative binary variable as the dependent variable, consisting as convenient to select the explanatory variables capable of discriminating category 1 (high valuation of the IBV) of category 0 (low valuation of the IBV). Moreover the binary logit models, also allows to calculate the probability methodology of each category of dummy variable from the characteristics of consumers expressed in demographic and economic (explanatory) variables involved.

Thus, this study was defined as a variable to explain, the YIBV variable, that takes the value 1 (YIBV = 1) when the consumer responds the 6 or 7 scale value (where 7 means totally agree and 1 strongly disagree Likert scales related to IBV) in each of the all ten items considered in the definition of IBV or YIBV being zero otherwise (YIBV = 0).

Thus, when it assumes a value of 1, means a consumer who greatly values or values by the maximum, the all ten items of IBV scale. The definition is very rigorous and challenging, as it only considers the answers with the highest values (6 or 7) on the seven point scale used. Additionally the defined criteria forces these high values across all the ten items of the Insignia Brand Value. The central equidistant position (interpreted as ' neither agree nor disagree ") was associated with the 4 scale number.
One should also be considered the existence of 145 missing values for the total sample.

The results find out that there are 1 379 inquired (45.14 %) under these conditions (YIBV= 1), while the remaining 1676 did not fully appreciate the IBV in all 10 items.

Firstly, it was carry on to the application of binary LOGIT models with one explanatory variable. The different categories of each explanatory variable were also coded as binary variables and included as explanatory model, removing the first category to avoid perfect multicollinearity, since the model also has a constant. At this stage, six models with one single explanatory variable were estimated and considering their categories as binary variables (see Table 15).

The odds-ratio Ln was the formula applied, which is:

$$\mathbf{Ln\ [P_i / (1-P_i)] = \beta_1 + \beta_2 X_{2i} + \ldots + \beta_k X_{ki} + u_i}$$

X_j (j = 2, .., k) are the gender (2 categories), the age (3 categories), the civil status (5 categories), the household members (3 categories), the education (3 categories) and the household income (5 categories).*

Table 15: Simple Binary Logit YIBV

		YIBV Coefficient (p-value)					
Constant	**(C)**	-1.002***	-0.248 (*ns*)	-0.128 (*ns*)	-0.379***	+0.60***	+.4212 (*ns*)
Gender	Female	+ 0.452***					
Age	26-50		+ 0.028 (ns)				
	≥ 51		+ 0.52***				
Civil Status	de facto relationship			-0.09 (ns)			
	Single			-0.267***			
	Divorced			+ 0.266***			

		YIBV Coefficient (p-value)					
Constant	**(C)**	-1.002***	-0.248 (*ns*)	-0.128 (*ns*)	-0.379***	+0.60***	+.4212 (*ns*)
	Widowed			+0.--336 (ns)			
Household Number	3-5				+0.258***		
	≥ 6				+ 0.6817***		
Education	Secondary					-0.70***	
	University					-1.14***	
Household Income	501-1000						-0.798***
	1001-1500						-0.6946**
	1501-2000						-1.00***
	> 2000						-1.296***
R^2 McFadden		.0063	.0030	.0037	.0040	.0266	.0136
Akaike		1.369	1.375	1.375	1.372	1.341	1.327
Schwarz		1.373	1.381	1.385	1.379	1.347	1.347
LR statistic		26.450	12.636	15.518	15.393	110.991	24.286
p-value		.000	.001	.0037	.0004	.000	.000
Log likelihood		-2075.5	-2078.5	-2083.77	-1881.194	-2030.46	-880.740
n		3035	3027	3038	2745	3031	1334

Note: *; **; *** p-value < 0.1; 0.05; 0.01

Secondly, after selecting the categories that were statistically significant (5% and 10% significance level), a multivariate logit model was estimated with these categories, having followed the "stepwise backward elimination" process so as to successively eliminate the categories that were not significant. The process ended when the categories considered were all significant at the 5% (and 10%, as was considered in this study).

This process was repeated twice. Once considering the initial set of five variables comprising the gender (two categories), the consumer age (three categories), the civil status (five categories), the household number of members (three categories) and the consumer educational level (three categories).

In a second time, by contemplating additionally, the consumer monthly net income (five categories). The reason to make the two analyses was due to the fact that the income variable causes a significant reduction of the sample, with only 1334 observations votes against the 3055 total observations available (non-missing values) (see Table 16).

Table 16: Multivariate binary Logit models of YIBV

Categories	Initial Model 5variables	Initial Model 6variables	Final Model 5variables	Final Model 5variables	Final Model 6variables	Final Model 6variables
Constant (C)	-.728***	-.093 (ns)	-.750***	-.744***	-.662**	-.590**
Female gender	.635***	.307**	.629***	.649***	.340**	.330**
26-50 age	-	-	-	-	-	-

Categories	Initial Model 5variables	Initial Model 6variables	Final Model 5variables	Final Model 5variables	Final Model 6variables	Final Model 6variables
≥ 51 age	.582***	.529**	.602***	-.659***	.516*	-
de facto relationship		-	-	-	-	-
Single	-.107 (ns)	-.098 (ns)	-	-	-	-
Divorced	.265 (ns)	.472 (ns)	.295 (ns)	-	.517**	.534**
Widowed	-	-	-	-	-	-
3-5 members	.237***	.421***	.255***	.227***	.414***	.405***
≥ 6 members	.525**	1.234***	.540**	.529**	1.221***	1.234***
Secondary education	-.723***	-.617***	-.730***	-.734***	-.669***	-.701***
University education	-1.108***	-.779***	-1.120***	-1.140***	-.892***	-.943***
501-1000 income	-	-.525 (ns)	-	-	-	-

Categories	Initial Model 5variables	Initial Model 6variables	Final Model 5variables	Final Model 5variables	Final Model 6variables	Final Model 6variables
1001-1500 income	-	-.501 (ns)	-	-	-	-
1501-2000 income	-	-.794**	-	-	-	-
> 2000 income	-	-1.036***	-	-	-.4325**	-.359**
McFadden	.0427	.0441	.0423	.0423	.0403	.0388
Akaike	1.323	1.298	1.323	1.322	1.296	1.296
Schwarz	1.343	1.355	1.340	1.337	1.336	1.331
LR statistic	157.350	67.556	156.089	156.834	61.828	59.749
p-value	.000	.000	.000	.000	.000	.000
Log likelihood	-1762.523	-731.765	-1763.153	-1772.560	-734.630	-738.575
n	2677	1147	2677	2691	1147	1152

Note: *; **; *** means p-value < 0.1; 0.05; 0.01

The results underline the importance of several categories of the different variables, when they are, simultaneously considered. Moreover, they explain the probability of YIBV=1, i.e, they explain the probability of considering quite important or absolut important the Insignia Brand Value. Moreover, the results enhance the importance of the proposed variables to explain the likelihood of consumers attach a high IBV value.

Thus, after having begun the process of modelling with the five variables, those explained the brand probability of being considered a very positive valuable insignia brand (with the criterion variables significant at 5%) are the female gender, consumer age more than 51 years old and consumer members between 3 and 5 and more than six members.

Pointing out that if adopting the criterion of p-value < 0.10, increasing the type I risk of a bad decision, the results, additionally includes, the divorced civil status category.

The consideration of the variable household income, despite the decrease in number of useful observations for estimating, yielded a solution close to the previous one. This situation reinforces the consistency and coherence of the results of this investigation.

Thus the probability determinants of assigning a high IBV value, considering the six variables, are: the female gender, the divorced civil status, 3-5 and ≥ 6 household number. As for the secondary and university consumer education as well as the household income greater than 2000 € per month categories, the estimated coefficient are negative, meaning a decreasing valuation of the IBV, relative to the reference categories.

Assuming type I error (the maximum assumed for the significance level is 0.10), then should be considered, in addition, the consumers age greater than 51 years old.

Thus, a case can be made about the importance of the LOGIT model in the calculation of probability of assigning a high IBV value by simultaneously identifying both the demographic and the economic factors.

With respect to the consumer gender, the probability of assigning high IBV value is higher in women relative to men.

Moreover, the mature consumers (≥ 51) represent the age category more relevant to attach a probability of perceived a high IBV value.

As it was expected, how bigger is the household number of members, much greater is the

probability of attached a more high value to the IBV.

Curiously, the higher is the level of the consumer education, the lower is the probability of the value assigned to the IBV. This result is contrary to the reference or baseline category posed by the basic education.

3.3 Discussion

Following the presentation of the new construct - the Insignia Brand Value (IBV) - this chapter aims to build up the IBV consumer´s profile. To achieve it, a set of six social demographic and economic variables – gender, age, civil status, household members, education and household income, and their respective categories, were taken into account. The methodology applied consisted of the parametric (ANOVA) and no parametric tests, complemented with the application of a set of simple and multivariate binary Logit functions.

Although the lack of published studies in the specific domain of this investigation-Insignia Brand Value - the discussion of the present results will resort to the private and generic brands literature.

The ANOVA results revealed that there is a statistical difference in the Insignia Brand Value according to the retail format, the consumer gender, age, household members number and consumer education. These results remained consistent after the application of non-parametric statistical tests.

Otherwise, after performing a 2 (retail format) x 5 (household income) ANOVA, the results marginally indicated that the household income has not a statistically impact on the Insignia Brand Value. Put differently, different perceptions and valuation on the Insignia Brand Value from the consumer point of view, could not be found when grouping the data by the different levels of household income.

A subsequent Kruskal-Wallis test, however, had a contrasting conclusion confirming that the consumer household income enjoy a statistically difference impact on the Insignia Brand Value.

Further Post hoc analysis was performed to identify a more detailed and sensitivity comparison among the descriptive variables and consequent statistical impact on the independent variable, Insignia Brand Value.
The results showed a significant difference in terms of the consumer point of view between the comparison pairs, namely: hypermarket vs. supermarket Insignia Brand Value and hypermarket vs. hard-discount Insignia Brand Value. The supermarket consumers are the springboard to the highest valuation of the Insignia brand products.

Moreover, the oldest consumers of hypermarket, supermarket and hard-discount, perceived and attached a higher value to the insignia brand products. Previous research found that consumers aged 26-55 constitute the age group of the new generic brand consumers, due to the difficult economic situation (Herstein and Tifferet 2007). So, the difference between the youngest ($\leq$ 25) and the oldest consumers ($\geq$ 51) is statistical significant and it was still qualitative noteworthy since the latter valued more to the insignia brand products. Maybe because the young generation is more tuned to brands or it could be the case that they have less experience with the insignia brand products.

The hypermarket, supermarket and hard-discount portuguese married consumers, perceived a large value to the insignia brand products than the single consumers. Moreover, the single consumers of all format retailing are the civil status category with the lowest Insignia Brand Value.

Regarding the household number, there is a direct proportional relationship between the number of household and the perception of the Insignia Brand Value. The larger the size of the household, the greater the value associated with the insignia brand products. This result is to be expected in the sense that larger families tend to spend greater amounts of consumer goods and consequently become more prone to insignia brand products. In addition, within the context high spending families, insignia brand purchasing assumes a critical priority in order to minimize their consuming burden.
So, this investigation is in line with previous findings of studies on generic brands which posit that consumers with large families tend to buy generic products (Herstein and

Tifferet 2007).

In what regards the consumer household income, the results suggested but a statistical difference between the lowest (< 500) and the highest (> 2000) household income comparison pair on the Insignia Brand Value. Bigger qualitative differences, however, were also displayed across the remaining consumer retail format universe. Whereas insignia brand products had more value to hypermarket consumers with higher income, in the case of hard discount consumers, on the contrary, the insignia brand value is highest when they have the lowest (< 500) income. This makes sense to the extent that it could be argued that within in the hypermarket context, consumers with highest income have more access to information or tend to be more knowledgeable about the insignia brand quality and, therefore, attach more value to those products. Moreover insignia brand quality products allow for an additional saving and trigger a rational acquisition process prompted by the economic crisis context. In the case of the hard discount context, consumers with the lowest income assign a superior value in view of their lack of purchase alternative options. In alternative, it could also be the case that they are pleased with the insignia brand products.

Previous research found conflicting results regarding the income of generic consumers. Some of those concluded that the income was low (Prendergast and Marr 1997), while others signaled an average income or an above-average income (Herstein and Tifferet 2007).

In the hypermarket context, this study showed quite clearly that the highest Insignia Brand Value is attached to the basic education consumer level. This result is against earlier research on generic products (Herstein and Tifferet 2007) and is to be expected since consumers with a basic education recognize the highest value of the insignia brand products. Additionally, in both supermarket and hard discount context, consumers with the superior education level perceived a lower Insignia Brand Value, suggesting the idea of a stigma towards the insignia brand products. Moreover, it could also be explained by a consumer association with a basic functional feature related to the insignia brand products.

The binary logit function results shown that there are 1 379 inquired (45.14 %) under these conditions (YIBV = 1), while the remaining 1676 did not fully or very valuated IBV in all 10 items. It should also considered the existence of 145 missing values for the total sample.

After running the application of binary LOGIT models with one explanatory variable, the results are very interesting and useful to the decision makers.

The further discussion of the simple binary logit function will take in account the constant (C) probability result which is represented by the first one category associated to each one of the six descriptive variables.
The consumers who attached a “high IBV value” are female and more than 51 years old. Moreover the divorced and widowed consumers are the categories with a more probability to give a “high IBV value”. Additionally, the larger families, upper than six household members have a higher probability to considered the insignia brand products as a “high IBV value”.

Against the decision-makers interviewees, the probability of obtain a “high IBV value” ago diminishes as it increases the consumer education level and the consumer household income. These results suggest that may be still exists in Portugal a stigma regarding the insignia brand products.

Then, the multivariate logit models demonstrated which descriptive variables and categories are, simultaneous, considered with a significant probability in the YIBV variable, i.e., in a “high IBV value” or in a “low IBV value”, by the consumer point of view.
Take in account the final model, including the household income independent variable, the categories with a “high IBV” impact - either positive or negative – are: the female, the oldest consumers upper 51, the divorced consumers, the 3-5 and upper than 6 household number members, the secondary and university education and the income category upper than 2000.

Chapter 4:

The Insignia Brand Value: A Structural Modelling Approach

4.0 Introduction

The aim of this chapter is to construct and validate a structural model of the Insignia Brand Value from the consumer point of view, previously absent from the brand management literature. It takes an holistic approach of the value associated to the products whose denomination matches the store name. Moreover, the structural model concerns the perceived consumer drivers of value for the insignia brands and the extent to which this value results in a higher customer satisfaction and loyalty for the brand. The proposal of the whole set of determinants constitutes the original contribution in this respect, but it also allows to validate that the Insignia Brand Value determines the attitude and behavior of consumers stated in the satisfaction obtained with their insignia brand products shopping experience alongside the brand loyalty.

The new model comprises two logical moments of analysis. The first one relates to the Insignia Brand Value background and determinants. These determinants result both, from the literature review and from in-depth interviews to the decision makers, identified in chapter 1.

The second logical moment of analysis regards the consequent outcomes of the Insignia Brand Value.

4.1 Conceptual framework and hypotheses

In order to understand the process of consumer behaviour and to assess how to build Insignia Brand Value a new model will be put forward drawing on past findings. To begin with, previous research suggests that, the most important benefit of private labels products continues to be the economic benefit to the consumers than the national brand (Tzimitra-

Kalogianni et al. 2002, Baltas 1997). Secondly, perceptions of low quality and risk provide the strongest negative categorization drivers which are likely to increase the likelihood that a product is an own label brand (Nenycz-Thiel and Romaniuk 2009, Nenycz-Thiel and Romaniuk 2011). This applies to both users and non-users of private label brands regardless of consumer perceptions of private label brands evolution over time. Thirdly, it is almost consensual in past studies that perceived risk is one of the key factors on consumer decisions (Richardson et al. 1994).

This investigation assumes that (1) the Brand Trust, the Consumer Store Attitude and the Value Consciousness affect the Consumer Perceived Risk, which, in turn, determines the Insignia Brand Value. In addition (2) the Brand Trust, the Consumer Store Attitude and the Value Consciousness directly affect the Insignia Brand Value and (3) as consequence with implications in terms of both brand loyalty and brand satisfaction.

Further discussion on the determinants and their relationships in the specific context of Insignia Brand Value is needed, based on the research questions. Accordingly, this research predicts that **(H1) Positive Insignia Brand Value positively affects consumers´ Brand Loyalty** and **(H2) Positive Insignia Brand Value positively affects consumers´ Brand Satisfaction.**

4.1.1 Consumer Store Attitude and Consumer Perceived Risk

As Quelch and Harding (1996), p. 103, note, "What could be more convenient, some store owners argue, than to have consumers remember a single store name?". This raises the question of how consumer attitudes towards the insignia brand products are affected by their perception of the image of the store whose name they carry (Ailawadi and Keller 2004). Consumers´ choices - select which brands products they will carry out in the specific retail brand mostly by the point of sales (Juhl et al. 2006). In fact this emphasizes the consumer store attitude like the first determinant of insignia brand products´ value. The consumer reduces the store brand portfolio decision process when opting for one specific sales point, whether hypermarkets, supermarket or hard-discount. Moreover literature about the this issue emphasizes the fact that perceived risk is also a crucial

variable to understand the consumers´ willingness to buy private label products (Batra and Sinha 2000, Richardson et al. 1994). Consumer behaviour involves risk in the sense that any action of a consumer will produce consequences which he cannot anticipate with anything approximating certainty, and some of which at least are likely to be unpleasant. The store name mitigates consumers´ perceived risk of buying a brand and that intentions to purchase private label products are influenced by consumers´ perceptions of the retailer´s capability of producing the product (Delvecchio 2001). Adverse consequences may vary between and within product categories, on the brand level and amongst consumers. Six main risk dimensions have been previously proposed- to explain consumers´ choice behaviour: performance, financial, social psychological and physical risk (Jacoby and Kaplan 1972), as well as time or convenience risk. Various studies have point to the idea that the risk associated with buying a store brand product is significantly higher than that of buying a national brand alternative. Retailers´ own brands are generally associated with higher perceived risk levels than fellow national brands. Hence, by revealing itself as the manufacturer and endorser of the brand, a store with a good image can add value to the product by reducing the perceived risk of buying the brand (Semeijn et al. 2004). A negative store image, on the contrary, is likely to have a negative impact on consumers´ store brand perceptions.

Accordingly, this study predicts that **(H3) Positive consumer store attitude negatively affects consumer´s perceived risk of buying insignia-branded products. (H4) Positive consumer store attitude positively affects consumer´s Insignia Brand Value. (H5) High Consumer Perceived Risk negatively affects consumer´s Insignia Brand Value.**

4.1.2 Brand Trust

Literature about relational marketing claims the concept of trust as the main latent variable, and as the starting point of any type of relationship (Morgan 1994, Andaleeb 1995). Having in mind that a strong brand is "a safe place for consumers" (Richards 1998), the importance of trust as a balance of the different relationships between a consumer and a brand- assumes an outstanding role in the literature of brand management.

Indeed previous studies emphasize the fact that the "brand trust" concept is related to the perception of a certain risk hereby understood as uncertainty about a particular result, which is an essential condition to influence the consumer's choice and behaviour. According to Andaleeb (1995) consumers are more likely to evaluate a brand when a certain risk is implicit. The concept of brand trust is also linked to the individual expectations about safety and the brand's purposes, especially in situations of risk for the consumer (Ballester 2002). For example, in the food industry, trust is a valuable strategic variable because consumers are concerned about the safety and the quality of the processed food products (Lindgreen 2003). The existing literature suggests that there is a stigma towards private, store and insignia brand-products because they are not seen as trustworthy by the consumers. This has a major dimension in some product categories like diapers and baby hygiene products in which consumer brand trust is weak and thus the Insignia Brand Value is "depreciated". The brand trust construct is especially relevant in a private label context, in general, but with a pivotal importance in terms of the baby products. Consumers develop decision making strategies to reduce the perceived risk and perform their choice process with the best brand trust, mostly when there is few available information or thereby in uncertain context. Brand Trust is an antecedent of the perceived Insignia Brand Value. Brand equity can be viewed as the value added to the product (Keller, 1993) or the perceived value of the product in the consumers´ minds. Mahajan (1994) claim that the customer-based brand equity can be measured against the level of consumers´ perceptions. This is the case, to the extent that a private and an insignia brand must be trustworthy to have a positive value in the consumer's mind.

With respect to these past findings this research predicts that **(H6) Positive consumer Brand Trust negatively affects consumer´s perceived risk of buying insignia-branded products. (H7) Positive Consumer Brand Trust positively affects consumer´s Insignia Brand Value**

4.1.3 Value Consciousness

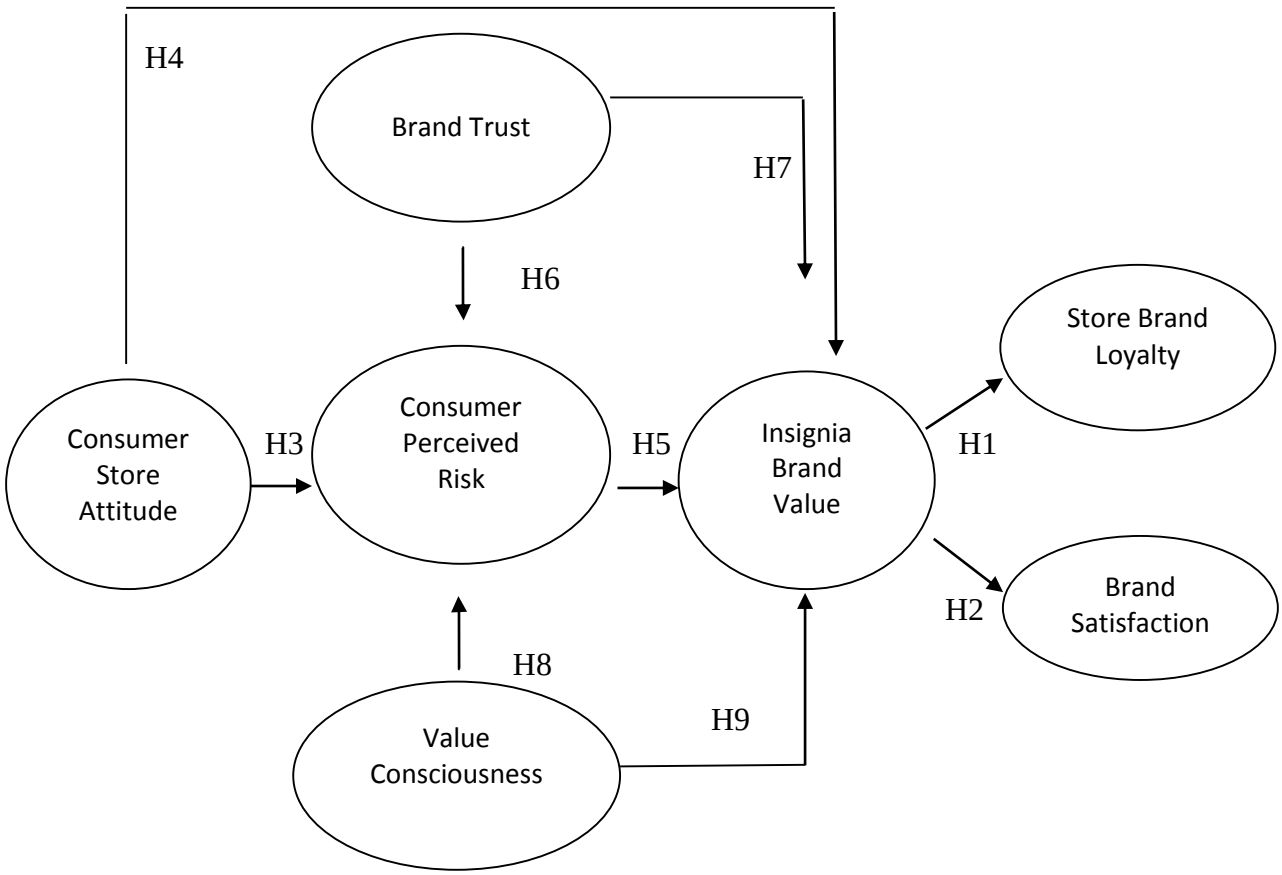
Private labels and insignia brand products, more precisely, reflect the relation between consumers´ perceived quality and the sales price. The judgment of this fair or unfair relationship is crucial to answer the real dilemman insignia brand vs. national brand

acquisition process. Value consciousness is "a concern for paying low prices subject to some quality constraints" (Lichtenstein et al. 1993), p.235. This is so since value-conscious shoppers thrive to maximize the quality/price ratio (i.e., value) of their purchases. Shoppers, may therefore, choose insignia brands if the lower price sufficiently compensates for the lower perceived quality (Richardson et al. 1994).

Having said this, the value for money orientation (Richardson et al., 1994) taken by the retailers in the marketing of its store and insignia brands, cannot be considered to be an optimal orientation (Richardson et al., 1994). On the contrary, a focus on quality could be a more effective tool for increasing value (Erdem et al. 2004). Indeed, a number of supermarket chains (e.g., Carrefour and Sainsbury) have been extremely successful with their own brands, by matching and even surpassing the quality of the category leader and by actively communicating the quality of their store brands to shoppers through in-store information, advertising and public relations campaigns (Wulf et al. 2005, Richardson et al. 1994).

In this regard this investigation proposes that **(H8) Positive consumer value consciousness negatively affects consumer´s perceived risk of buying insignia-branded products** and **(H9) Positive consumer value consciousness positively affects consumer´s Insignia Brand Value.**
Fig.3 visually summarizes the proposed relationships in a structural model.

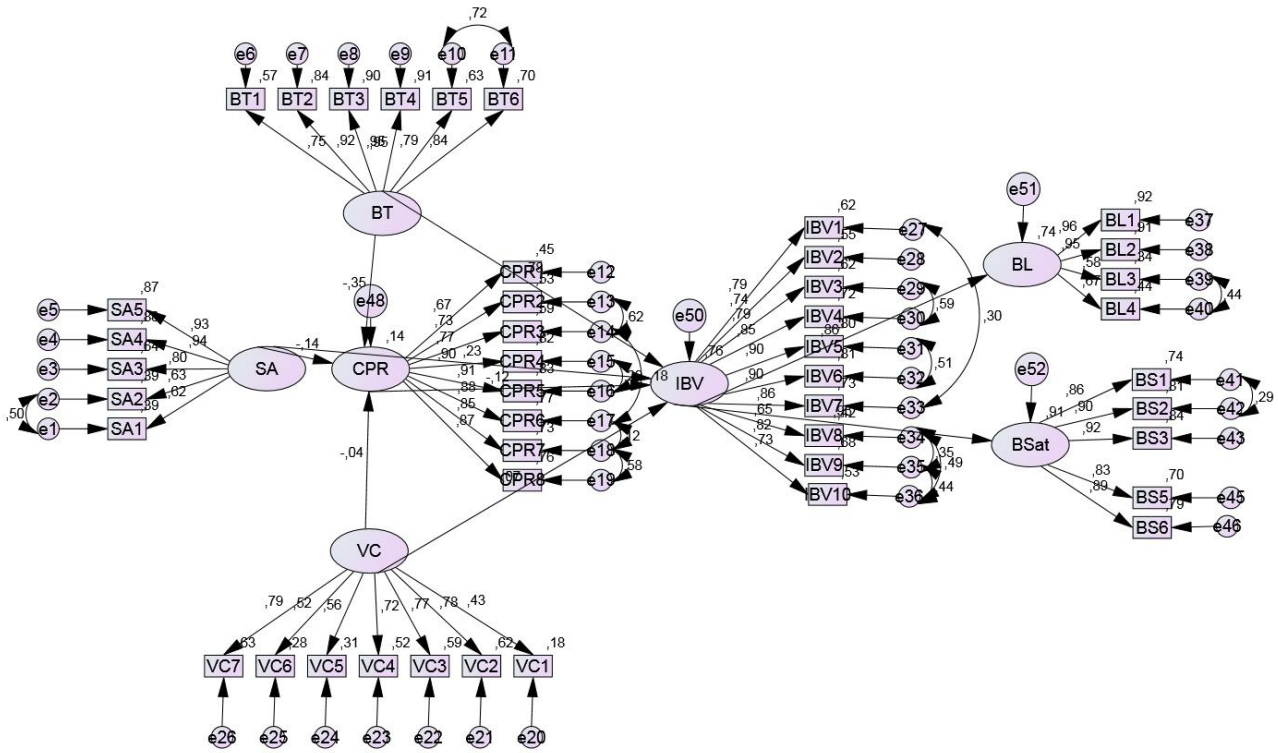
Figure 3: Hypothesized model of determinants and consequents of the Insignia Brand Value



4.2 Structural model estimation

The structural model, is comprised of three exogenous variables (store brand attitude, value consciousness and brand trust) and four endogenous variables (consumer perceived risk, Insignia Brand Value, brand loyalty and brand satisfaction) (see Figure 4).

Figure 4 - Structural model of the determinants and consequents of Insignia Brand Value



The goodness of fit indices shows acceptable matching of the model as a whole: CMIN/DF = 13.557, CFI = .926, NFI = .921, TLI = .917 and RMSEA = .063. The chi-square coefficient is significant ($\chi 2[921] = 12486{,}118$, $p < .0001$), which is usually the case for large sample sizes (> 250). The other statistic fit indices are within the acceptable values, which indicate a good model fit (see table 17). An examination of the unstandardized parameters discloses all estimates to be both reasonable and statistically significant ($p < .001$), except one ($p < .011$) and all standard errors appear to be in good order.

Table 17: AVE and CR for the structural model

Dimensions	Standardized Regression Weights	Reliabilities index (R^2)
Store Attitude	0,7836	0,61402896
Brand Trust	0,867	0,751689
Consumer Perceived Risk	0,822625	0,676711891
Value Consciousness	0,654285714	0,428089796
Insignia Brand Value	0,8015	0,64240225
Brand Satisfaction	0,8802	0,77475204
Brand Loyalty	0,79075	0,625285563
AVE	**0,6447085**	> 0,5
CR	**0,926520228**	> 0,7

The results suggested that the impact of Insignia Brand Value on consumers´ brand loyalty is significant and positive (β = .860, p < .001), in support H1 and its impact on brand satisfaction is also significant and positive (β = .953, p < .001), supporting H2. It is worth noting the important influence that Insignia Brand Value has on brand loyalty and brand satisfaction. The hypothesis postulated in H3 and H4 was both confirmed. So the impact of consumer store attitude on consumer´s perceived risk of buying insignia-branded products is negative and significant (γ = -.137, p < .001) and the impact of consumer store attitude on Insignia Brand Value is positive and significant (γ = .233, p < .001). Furthermore the impact of consumer perceived risk on Insignia Brand Value is also negative and significant (β = -.123, p < .001), in support of H5. As posited in the theoretical model the impact of consumer brand trust on consumer´s perceived risk of buying insignia-branded products is negative and significant (β = -.349, p < .001), in support of H6. With regard to the influence of consumer brand trust on consumer´s Insignia Brand Value the impact is positive and significant (β = .778, p < .001), in support of H7. With respect to the impact of consumer value consciousness on the consumer´s perceived risk of buying insignia-branded products, the standardised coefficient is significantly different to zero and the sign of the relationship between these constructs is

accord to the proposed model (β = -.044, p < .005). This result support the hypothesis H8 and confirms that value consciousness is a predictor variable of the consumer´s perceived risk of buying insignia-branded products.

Finally, the impact of consumer value consciousness on consumer´s Insignia Brand Value is positive and significant (β = .075, p < .001). Therefore, the hypothesis H9 is accepted.

Table 18: Insignia Brand Value structural model estimated

Hypotheses (expected signal)		Loading	p-value	Conclusion
H1	Insignia Brand Value → Brand Loyalty (+)	.860	p < .001	Confirmed
H2	Insignia Brand Value → Brand Satisfaction (+)	.953	p < .001	Confirmed
H3	Store Attitude → Consumer Perceived Risk (-)	-.137	p < .001	Confirmed
H4	Store Attitude → Insignia Brand Value (+)	.233	p < .001	Confirmed
H5	Consumer Perceived Risk → Insignia Brand Value (-)	-.123	p < .001	Confirmed
H6	Brand Trust → Consumer Perceived Risk (-)	-.349	p < .001	Confirmed
H7	Brand Trust → Insignia Brand Value (+)	.778	p < .001	Confirmed
H8	Value Consciousness → Consumer´s Perceived Risk (-)	-.044	p < .05	Confirmed
H9	Value Consciousness → Insignia Brand Value (+)	.075	p < .001	Confirmed

Accordingly, this investigation found support for all the expected relationships hypothesised in the proposed model.

The impact of each one of the independent variable on the corresponding dependent variable represented in the structural model could be, additionally confirmed, through the standardized total effects (see Table 19).

Table 19: Standardized total effects

	Brand Trust	Consumer Store Attitude	Value Consciousness	Consumer Perceived Risk	Insignia Brand Value
Consumer perceived risk	-.349	-.137	-.044	-	-
Insignia Brand Value	.821	.250	.080	-.123	-
Brand Satisfaction	.782	.238	.077	-.118	.953
Brand Loyalty	.705	.215	.069	-.106	.860

Note: These values includes both, direct and indirect effects.

4.3 Discussion

This chapter proposed a structural equation modelling (SEM) of the Insignia Brand Value, which construct has been introduced in chapter 2 of this thesis. The SEM methodology has been a great pole of the multivariate statistical analysis in brand management in great measure due to its advantage of simultaneously allowing for the analysis of both the measurement and structural models (Beristain and Zorrilla 2011, Jara and Cliquet 2012, Gil-Saura et al. 2013).

The model developed proposes a set of determinants and consequents of the Insignia Brand Value. Namely, the store brand attitude, brand trust, consumer perceived risk and value consciousness were included as the determinants of the new construct, with the consequents being the brand satisfaction and the brand loyalty.

The findings suggested adequate validity and reliability of the recursive model (seven-factor model with 45 variables). The goodness of fit indices shows acceptable matching of the model (CMIN/DF = 13.557, CFI = .926, NFI = .921, TLI = .917 and RMSEA=.063)

according to the large sample (N= 3200) used to. The other statistic fit indices were within the acceptable values, which indicate a good model fit and clearly supported all the proposed hypotheses, which in turn supported the conceptual framework of this investigation.

Moreover, the results showed that the brand trust appears as the major predicting of the Insignia Brand Value (IBV), followed by the consumer attitude to the store. Instead, the value consciousness latent variable is the less predictive antecedent of the IBV.

Thus, the present research developed relevant theoretical and methodological contributions to the brand management literature – conceptualization, measuring and modelling the Insignia Brand Value new construct.

Chapter 5:

An invariance analysis tests of the Insignia Brand Value

5.0 Introduction

Private label sales are up everywhere and they deserve the efforts of the most important strategies developed by retailers in the last two decades (Berges-Sennou 2006). Although the investigation on this topic has recently deserved critical attention within both Brand Management literature and practice, it is still limited in scope and depth. Previous research suggested that, the most important benefit of private labels products continues to be the economic benefit to the consumers than the national brand (Baltas 1997, Tzimitra-Kalogianni et al. 2002).

Chapter 1 examined several information about private labels´ variables decision making over time by resorting to data collected from semi-structured interviews of four private label retailers in Portugal. The results indicated that Brand Trust and Value Consciousness appear to be the main drivers of store brand value, in general, and more specifically, the insignia brand products. Against previous studies that have identified the economic benefit to the consumers as the most important benefit of private label products, the first investigation of this thesis identified in chapter 1 suggested that price is not the most important variable in the Insignia Brand Value context.

Additionally, chapter 2 proposed and conceptualized the new structural equation modelling of the Insignia Brand Value, which results suggested adequate validity and reliability of the recursive model.

A crucial benefit of achieving construct validity is that a construct meets all of the requirements of reliability and validity not only in one particular situation, but hopefully across all of the potential situations in which it can be applied (Hair et al. 2010).

Moreover, this chapter proposes investigated the consistency of the model across two different groups. The decision consisted in dividing the original 3200 universe of respondents into two distinct products categories with contrasting market share but in both cases still representative of the consumer goods large distribution' formats in Portugal - hypermarket, supermarket and hard discount - according to what was proposed by the decision-makers in chapter 1.

The central concern is whether or not components of the measurement model and/or the structural model are equivalent (i.e., invariant) across these particular groups of interest (Byrne 2010).

A multi-group confirmatory factor analysis is the appropriate methodology that will be carried out in the present chapter.

The results thoroughly validate the consistency of the model.

5.1 Literature review

Numerous SEM applications involve analysing groups of respondents (Hair et al. 2010). Groups are often formed from an overall sample, by dividing it by meaningful characteristics as competitive intensity (Swoboda et al. 2009) or distinct cultural (Yoo et al. 2000).

In order to prove the equivalence of measures, across different groups, simultaneous MGCFAs are suggested to be the most powerful approach for testing measurement invariance (Steenkamp and Baumgartner 1998).

Previous literature on brand equity (Yoo et al. 2000) and retail brand equity applied multi group methodology (Swoboda et al. 2013, Gauri et al. 2008) to assess the measurement equivalence across multiple samples.

Accordingly, Jöreskog (1971) recommended that all tests for equivalence begin with a

global test of the equality of covariance structures across the groups of interest. Moreover attention to parsimony is of utmost importance in SEM, and this is especially true in tests for multi-group equivalence. The more difficult it is to determine measurement and structural equivalence. The test for the equivalence of the factor loadings reflects the measurement invariance and factor correlations concern the structural invariance across the groups. Although the concept of partial measurement equivalence was very used to test the multi-group equivalence has sparked a modest debate in the technical literature (Millsap and Kwok 2004).

The classical approach in arguing for evidence of noninvariance is based on the $\chi 2$ difference ($\Delta\chi 2$) test (Jöreskog 1971). Evidence of noninvariance is claimed if this $\chi 2$ difference value is statistically significant. Throughout the last decade, "researchers have argued that from a practical perspective, the $\chi 2$ difference test represents an excessively stringent test of invariance and particularly in light of the fact that SEM models at best are only approximations of reality" (Byrne 2010), p. 221. Consistent with this perspective, Cheung and Rensvold (2002) reasoned that it may be more reasonable to base invariance decisions on a difference in CFI (ΔCFI) rather than on $\chi 2$ values. This criterion points that evidence of noninvariance be based on a difference in CFI values exhibiting a probability < .01.

5.2 Methodology

This investigation conducted a Multi-group confirmatory factor analysis (MGCFA), comparing the theoretical model with the observed structures in two independent samples to determine whether the respective path coefficients differed.

The first hierarchical step begins with the determination of a baseline model for each group separately. Accordingly, it was built structural models to test the equality of the paths between the product categories with more penetration of insignia brand products (Group 1) and the other with less penetration rate in Portugal (Group 2). Hence, group 1 subsample (N = 1856) included the cleaners home and basic grocery, and group 2

subsample (N = 1344) is relative to drinks and cosmetics/perfumery product categories. The baseline model represents the one that best fits the data from the perspectives of both parsimony and substantive meaningfulness (Byrne 2010). The estimation of the baseline model suggests no between groups constraints. After, the same parameters that were estimated in the baseline model for each group separately, must be again estimate in the multi-group model which is commonly denominated the configural model. Its major function is that to provide the baseline against which all subsequent tests for invariance are compared. Accordingly, it will be test the configural invariance. Because no equality constraints are imposed on any parameters in the model, no determination of group differences related to either the items or the factor covariances can be made. Consistent with single-group analyses, goodness-of-fit for this multi-group parameterization should exhibit a statistical good fit to the data for both groups.

Thus involves that the data for all groups must be analysed simultaneously to obtain efficient parameters (Bentler 2005).

Then the analysis proceed in testing for the invariance of factorial measurement and structure across groups. However, the invariance tests imposes equality constraints on particular parameters.

5.3 Results

To test measurement invariance across the two subsamples, alternative models was sequentially analysed with decreasing numbers of parameters to be estimated due to the addition of parameter constraints one at a time (Jöreskog and Sörbom 1996). Firstly it was established the baseline model. To establish a baseline model, additional CFA was conducted separately for each group. The baseline model analysed was completely identical across the two groups, including the same error covariances. The results of principal indices suggest that the model fits the data well for both groups (Chen et al. 2008). For the product categories with high insignia brand market penetration (Group 1): $\chi2(921) = 8230.945$, $p < .001$, $\chi2/df = 8.937$, CFI = .919, RMSEA = .065 (90% CI = .064–

.067) and to the product categories with low insignia brand market penetration (Group 2): $\chi 2$ (921) = 5940.941, p < .001, $\chi 2$/df = 6.451, CFI = .924; RMSEA = .064 (90% CI = .062–.065).

After establishing these baseline model was conducted an invariance analysis. To test the configural invariance no equality constraints were imposed on the parameters across the two groups. The results of unconstrained model, suggested a well fitting in its representation of the multi-group penetration rate of insignia product category (CMIN/DF = 7.693, p < .001, CFI = .922, RMSEA = .046 [.045- .046]). Overall goodness-of-fit indices for the model indicated the adequacy of an invariant seven-factor model across different insignia brand products category.

Then, it was observed the metric invariance. In the metric or "measurement weights" model, factor loadings were constrained to be equal across the two subsamples, while factor variances, error variances, and covariance parameters were free to vary between the two samples. Table 20 provides the summary of goodness-of-fit statistics.

Table 20: Invariance Analysis

	CFI	RMSEA	$\chi 2$	df	$\Delta \chi 2$	Δ df	Δ CFI
Configural model (Unconstrained)	.922	.046 (.045-.046)	14.170.158	1842	-	-	-
Metric model (Model 1)	.921	.046 (.045-.046)	14.334.375	1880	164.217 (p< .001)	38	.001 (< .01)

Note: $\Delta\chi 2$, Δdf, and ΔCFI were the difference between the metric model and the configural model

To determine evidence of metric invariance model it was compared the difference values of $\chi 2$, df, and CFI, between the metric and the configural model across groups. Byrne (2010) recommended two criteria for evidence of measurement invariance: (1) the multi-group model should exhibit an adequate fit to the data; and (2) Δ CFI < .01. One of the

advantages of Δ CFI over the Δ $\chi 2$ is that it is not as strongly affected by sample size. The results exhibited in Table 20 confirmed that Δ CFI is lower than .01 and consequently, confirmed the metric invariance model between the two groups.

The difference in chi-square values between the configural and the metric model and the subsequent examination of the probability value ($p < .001$) did reveal, at least, the existence of one noninvariant parameter in the metric invariance. This revealed that, at least, one parameter is not operating equivalently across the two groups, indicating the condition of partial measurement invariance (Byrne 2010). Table 21 shown the noninvariant intercept parameters ($p < .05$) identified in the metric model invariance.

Table 21: Noninvariant intercept parameters

Parameters Constraints	**p value**
- Noninvariants factor loading -	($p < .05$)
a7: These products brand never let me down (BT 4)	.016
a8: This is an honest brand (BT 5)	.004
a9: This brand is safe (BT 6)	.011
a10: Purchasing a 'Store Brand' would be risky, because my friends, relatives and colleagues would not approve of it (CPR 2)	.000
a11: Purchasing a 'Store Brand' would be risky, because others would think less highly of me. (CPR 3)	.000
a13: In my specific case it is risky choose the products with brand X. (CPR 5)	.002
a14: I think it's risky to choose the products with brand X not match the other products I use (CPR 6).	.000

Parameters Constraints	p value
- Noninvariants factor loading -	(p < .05)
a15: I feel like I'm losing money when buying an insignia brand product rather than a national brand product. (CPR 7)	.018
a16: I think it is financially risky choose the branded products X. (CPR 8)	.000
a20: I generally shop around for lower prices on products, but they still must meet certain quality requirements before I will buy them. (VC 5)	.004
a21: When I shop, I usually compare the "price per Kg/Lt" information for brands I normally buy. (VC 6)	.031
a25: I feel good for having bought this store brand. (IBV 4)	.014
a28: The X brand gives me the same quality assurance of a national brand. (IBV 7)	.020
a29: With X brand products I´m able to fill up more my shopping Cart.(IBV 8)	.049
a31: The X brand helps me to save.(IBV 10)	.021

This result strengthens the perspective of $\chi 2$ difference test represents an excessively stringent test of invariance in a SEM context. Additionally the results of this investigation are consistent with Byrne´s that it may be more reasonable to base invariance decisions on a difference in CFI rather than on $\chi 2$ values.

5.4 Discussion

Between-group comparisons are permitted and only meaningfully interpretable if the diagnostic instruments are proved to measure the same latent dimensions across different groups. Addressing this issue, the investigation present in this chapter was carried out to

provide a rigorous test of measurement invariance, based on the Insignia Brand Value structural equation modelling proposed and validated in the chapter 4.

Multigroup confirmatory factor analysis was conducted to evaluate the evidence for measurement invariance. Configural and metric invariance analysis, according to the CFI criterion, showed that the original seven-factor structure can be used across the insignia product categories with high share of market penetration and the insignia product categories with low share of market penetration in Portugal. This reflects, once again, a wide consistency of the model. Following the chi-squared criterion, partial measurement invariance was obtained because some variables did not operate equivalently across groups (see Table 20). This research has pioneered the identification of variables that represent a cleavage with regard to product category.

Conclusion

This thesis aims at making a contribution to the brand management literature on the specific context of the insignia brand products. This was achieved in different ways and by combining distinct methodologies. One of the main objective was to both define and quantify a new latent construct – Insignia Brand Value (IBV) – as well as to identify its antecedents and consequents and validate it in a sample of consumers.

First, the objective was to identify the variables or dimensions regarded as critical by the store brand managers for insignia brand products success. Against previous and very recent research on retail brand equity (Jara and Cliquet 2012, Musekiwa et al. 2013), one of the most important findings of this investigation is that the main drivers of insignia brand equity which need to be exploited in the Portuguese context are the consumer value consciousness alongside the consumer brand trust. This fact highlights the private label decision makers about the definition of the price variable of insignia brand products. They must define not the lowest price, but the one that offers the highest consumer value in the price *vs* quality relationship.

Second, the need to measure and capitalise the value of the brands is something crucial in the field of insignia brand products. These brands are regarded as prime competitive trends from the national brands. Moreover, Insignia brand products are increasing their market share with a growing potential for achieving more power in the retail context.

Furthermore, an original construct of Insignia Brand Value is advanced that contemplates the measuring and the validation of this new concept.

The sample was particularly constituted by female adults married with a university education and the vast majority of them having a household income higher than € 1000. It should be mentioned that the proposed new latent construct had an excellent reliability value (Cronbach´s $\alpha = .963$) and represented a desired unidimensional scale which is composed by 10 items with a total of variance explained around 75.667%.
This good reliability result was extended to the remaining constructs. Hence, for all seven

latent constructs, the coefficient alphas (Cronbach 1951) exceeded the suggested 0.80 level mentioned in the literature which are indicative of good internal consistency and therefore validates the psychometric quality of this investigation scales. Indeed, the reliability coefficients ranged from 0.813 to 0.963.

The results of the exploratory factor analysis (component analysis) associated to the measurement scales, demonstrated a clear factorial structure and consequently, the unidimensionality in all analysed constructs – store brand attitude, brand trust, value consciousness, consumer perceived risk, Insignia Brand Value, brand satisfaction and brand loyalty. Moreover, the correlations among the seven constructs are high and very significant.

The findings suggest acceptable convergent validity. Additionally, they demonstrate that the model fit the data well (CFI and NFI higher than 0.9 and RMSEA lower than .06) in the sense that the hypothesized model adequately describes the sample data. The goodness-of-fit statistics for the measurement model are as follows: CMIN/DF = 10.510, CFI= .945, NFI= .939 and RMSEA= .055. The RMSEA with the 90% confidence interval ranging from .054 to .056, which represents a good degree of precision.

Almost all the measures of the constructs in the measurement model achieve discriminant validity and differentiated factors (Fornell and Larcker 1981). This was not the case, however, in the variable pairs “Insignia Brand Value” and “Brand Loyalty”, “Insignia Brand Value” and “Brand Satisfaction” and “Insignia Brand Value” and “Brand Trust”.

Firstly, this could be justified by a statistical point of view. Insignia Brand Value presents a very high correlation with both brand loyalty and brand satisfaction as either with the brand trust construct. Secondly, there is a theoretical and conceptual reason for these results. The Insignia Brand Value (IBV) was defined in this investigation as an expression of the value of the insignia brand products of each one of the retailers brands here presented. So this could be representative of a more evaluative, consequence or outcome construct, such as, both brand loyalty and brand satisfaction constructs.

However, this investigation had estimated an alternative model by setting the correlation between these three pairs of variables at 1 (Anderson and Gerbing 1988). The test of Chi-

Square differences, between the unconstrained and the constrained model, indicated a significantly poorer fit in this case ($\Delta\chi^2$ = 2248.758; p < .001; ΔCMIN/DF = 2.347; Δ RMSEA = 0.006; Δ CFI = - 0.015), thus corroborating the existence of discriminant validity.

Third, the IBV consumer´s profile was created. To achieve it, a set of six social demographic and economic variables – gender, age, civil status, household members, education and household income, and their respective categories, were taken into account.

The methodology applied consisted of the parametric (ANOVA) and no parametric tests, complemented with the application of a set of simple and multivariate binary Logit functions.

Despite the lack of published studies in the specific domain of this investigation- Insignia Brand Value - the discussion of the present results will as much as possible resort to the private and generic brands literature.

The ANOVA results revealed that there is a statistical difference in the Insignia Brand Value according to the retail format, the consumer gender, age, household members number and consumer education. These results remained consistent after the application of non-parametric statistical tests.

Otherwise, the results marginally indicated that the household income has not a statistically impact on the Insignia Brand Value. Put differently, different perceptions and valuation on the Insignia Brand Value from the consumer point of view, could not be found when grouping the data by the different levels of household income.

A subsequent Kruskal-Wallis test, however, had a contrasting conclusion confirming that the consumer household income enjoy a statistically difference impact on the Insignia Brand Value.

Further Post hoc analysis was performed to identify a more detailed and sensitivity comparison among the descriptive variables and consequent statistical impact on the independent variable, Insignia Brand Value.

The results showed a significant difference in terms of the consumer point of view between the comparison pairs, namely: hypermarket vs. supermarket Insignia Brand Value and hypermarket vs. hard-discount Insignia Brand Value. The supermarket consumers are the springboard to the highest valuation of the Insignia brand products.

Moreover, the oldest consumers of hypermarket, supermarket and hard-discount, perceived and attached a higher value to the insignia brand products. Previous research found that consumers aged 26-55 constitute the age group of the new generic brand consumers, due to the difficult economic situation (Herstein and Tifferet 2007). So, the difference between the youngest ($\leq$ 25) and the oldest consumers ($\geq$ 51) is statistical significant and it was still qualitative noteworthy since the latter valued more to the insignia brand products. Maybe because the young generation is more tuned to brands or it could be the case that they have less experience with the insignia brand products.

The hypermarket, supermarket and hard-discount portuguese married consumers, perceived a large value to the insignia brand products than the single consumers. Moreover, the single consumers of all format retailing are the civil status category with the lowest Insignia Brand Value.

Regarding the household number, there is a direct proportional relationship between the number of household and the perception of the Insignia Brand Value. The larger the size of the household, the greater the value associated with the insignia brand products. This result is to be expected in the sense that larger families tend to spend greater amounts of consumer goods and consequently become more prone to insignia brand products. In addition, within the context high spending families, insignia brand purchasing assumes a critical priority in order to minimize their consuming burden.
So, this investigation is in line with previous findings of studies on generic brands which posit that consumers with large families tend to buy generic products (Herstein and Tifferet 2007).

In what regards the consumer household income, the results suggested but a statistical

difference between the lowest (< 500) and the highest (> 2000) household income comparison pair on the Insignia Brand Value. Bigger qualitative differences, however, were also displayed across the remaining consumer retail format universe. Whereas insignia brand products had more value to hypermarket consumers with higher income, in the case of hard discount consumers, on the contrary, the insignia brand value is highest when they have the lowest (< 500) income. This makes sense, to the extent that it could be argued that within in the hypermarket context, consumers with highest income have more access to information or tend to be more knowledgeable about the insignia brand quality and, therefore, attach more value to those products. Moreover, insignia brand quality products allow for an additional saving and trigger a rational acquisition process prompted by the economic crisis context. In the case of the hard discount context, consumers with the lowest income assign a superior value in view of their lack of purchase alternative options. In alternative, it could also be the case that they are pleased with the insignia brand products.

Previous research found conflicting results regarding the income of generic consumers. Some of those concluded that the income was low (Prendergast and Marr 1997), while others signaled an average income or an above-average income (Herstein and Tifferet 2007).

In the hypermarket context, this study showed quite clearly that the highest Insignia Brand Value is attached to the basic education consumer level. This result is against earlier research on generic products (Herstein and Tifferet 2007) and is to be expected since consumers with a basic education recognize the highest value of the insignia brand products. Additionally, in both supermarket and hard discount context, consumers with the superior education level perceived a lower Insignia Brand Value, suggesting the idea of a stigma towards the insignia brand products. Moreover, it could also be explained by a consumer association with a basic functional feature related to the insignia brand products.

The binary logit function results show that there are 1 379 inquired (45.14 %) under these conditions (YIBV = 1), while the remaining 1676 did not fully valueted IBV in all 10 items. It should also considered the existence of 145 missing values for the total sample.

The consumers who attached a “high IBV value” are female and more than 51 years old. Moreover the divorced and widowed consumers are the categories with a more probability to give a “high IBV value”. Additionally, the larger families, upper than six household members have a higher probability to consider the insignia brand products as a “high IBV value”.

Against the decision-makers interviewees, the probability of obtaining a “high IBV value” ago diminishes as it increases the consumer education level and the consumer household income. These results suggest that it might still exist in Portugal a stigma regarding the insignia brand products.

Then, the multivariate logit models demonstrated which descriptive variables and categories are, simultaneous, considered with a significant probability in the YIBV variable, i.e., in a “high IBV value” or in a “low IBV value”, by the consumer point of view.
Take in account, the final model, including the household income independent variable, has the following categories: - female; the oldest consumers upper 51; the divorced consumers; the 3-5 and upper than 6 household number members. These are the high IBV categories. Instead, the secondary and university education and the income category upper than 2000 are attached a low IBV value.

Fourth, a proposal of a structural equation modelling (SEM) to assess the determinants and consequents of Insignia Brand Value (IBV) was advance and validated it in the context of marketing B to C.
The SEM methodology has been a great pole of the multivariate statistical analysis in brand management in great measure due to its advantage of simultaneously allowing for the analysis of both the measurement and structural models (Beristain and Zorrilla 2011, Jara and Cliquet 2012, Gil-Saura et al. 2013).
The model hereby developed proposes a set of determinants and consequents of the Insignia Brand Value. Namely, the store brand attitude, brand trust, consumer perceived risk and value consciousness were included as the determinants of the new construct, with the consequents being the brand satisfaction and the brand loyalty.

The findings suggest adequate validity and reliability of the recursive model (seven-factor model with 45 variables). The fit indices shows acceptable matching of the model (CMIN/DF = 13.557, CFI = .926, NFI = .921, TLI = .917 and RMSEA = .063) according to the large sample (N= 3200) used to. The other statistic fit indices were within the acceptable values, which indicate the appropriateness of the model and clearly supported all the proposed hypotheses, which in turn supported the conceptual framework of this investigation.
Moreover, the results showed that the brand trust appears as the major predicting of the Insignia Brand Value (IBV), followed by the consumer attitude to the store. Instead, the value consciousness latent variable is the less predictive antecedent of the IBV.

The quantitative methodology of this thesis was applied to a Portuguese sample of the four store brands universe which have insignia brand products, in the context of consumer goods distribution chains. More concretely, three of the four existing insignia brands were observed from the consumer point of view, each one across four product categories. The primary data produced corresponded to a large sample dimension of 3200 questionnaires collected from store brands consumers.

In sum, this study represents a contribution to the store brand research in different ways. Firstly, it points out the critical variables considered as determinants of the Insignia Brand Value, previously missing in the literature review. The results suggested that, from the consumer point of view, the brand trust is the main or key determinant of the value attached to the insignia brand products. This could be justified considering the historic stigma surrounding these products and, consequently, the need that consumers have to get some confidence in their purchase. Moreover the dimension that best explains the insignia brand trust is "These products brand never let me down". This finding provides useful insights to the brand managers. Specifically, in the insignia brand communication as potential claim to leverage the insignia brand trust. The consumer store attitude is the second most influential antecedent of the Insignia Brand Value. Those combined findings enhance to the importance of the focus of this investigation. The insignia brand is the only type of distribution brands whose name match with the point of sale. Consequently the consumers attitude regarding to the store name must be carefully manage. For the better

and the worst, it is contagious for all the products with equal denomination.

The structural model also found that the consumer perceived risk represent a modest antecedent, almost insignificant, regarding the Insignia Brand Value. This is a very positive conclusion to the insignia brand products and enhances the consequent mitigation of the perceived risk associated to them. Thus, it could explain the increase of the store brands´ share of market against the backdrop of the crisis effect. Additionally, in line with a previous paper (Nenycz-Thiel and Romaniuk 2011) on the users of private labels, the users including in this sample, rely more and perceived a reduced risk. This investigation revealed that insignia brand consumers don´t need to compare the insignia brand products with others brands, as national brands. So value consciousness is not an influential antecedent of the insignia brand products.

Secondly, this thesis offers a new insight to the brand management literature by proposing a new latent construct, validated in a rather extensive sample. Specifically, a ten-item scale of measurement of the Insignia Brand Value was applied. Broadly speaking, these items constitute a progress in the scales of marketing measure literature. The excellent statistical findings both exalt the reliability of the new scale and underline the discriminant validity regarding its determinants. This enhances strength to the current investigation which defends that the value associated with the brand insignia products should be measured with a different scale to the one applied to national products brands - brand equity scale- and distinguished from the private labels scale. This investigation provides useful information about this construct, in the domain of marketing B to C. The results consolidate the concept of Insignia Brand Value as a construct for measuring a total utility value. Lastly, it draws attention to the expression of quantification of the products with the brand denomination in which they are available.

Thirdly the Insignia Brand Value is an excellent influential antecedent (see Table 19) of both, brand loyalty and brand satisfaction of the insignia brand products. In a competitive retailing market only the acknowledgement of value leads to the satisfaction and consequent consumer loyalty. From a managerial point of view, the Insignia Brand Value prompts the store brand value creation, aimed by all retailing players.

Fourthly, this investigation aimed at analyzing the reliability and the invariance of the determinants of the Insignia Brand Value across two groups, using confirmatory factor analytic techniques and invariance analysis to test the fit of the suggested model. Configural and metric invariance analysis, according to the CFI criterion, showed that the original seven-factor structure can be used across the insignia product categories with high share of market penetration and the insignia product categories with low share of market penetration. This reflects, once again, a wide consistency of the model. Following the chi-squared criterion, partial measurement invariance was obtained because some variables did not operate equivalently across groups (see Table 15). This research has pioneered the identification of variables that represent a cleavage with regard to product category.

Fifth, the consistency of the model across two distinct groups was assessed.
Thus, multigroup confirmatory factor analysis was conducted to evaluate the evidence for measurement invariance. Configural and metric invariance analysis, according to the CFI criterion, showed that the original seven-factor structure can be used across the insignia product categories with high share of market penetration and the insignia product categories with low share of market penetration in Portugal. This reflects, once again, a wide consistency of the model. Following the chi-squared criterion, partial measurement invariance was obtained because some variables did not operate equivalently across groups.

Moreover, this thesis contributes to the literature by developing a structural equation model framework as a response to the dearth in Insignia brand Value measurement scale and modelling.

Limitations and future research

Although these findings need to be replicated in other independent samples, it would be interesting to investigate whether non-users determinants of Insignia Brand Value differ from those of the users. Further studies should gather another type of distribution in physical channels and/or e-commerce whereby the name of the store match the name of a gamma or line brand, in order to confirm and generalize the results. Additionally, this research encourages future investigation in the successful evaluation of discriminant validity of the Insignia Brand Value construct. So it will be suggested a test of a concept so as to verify if the Insignia Brand Value is not highly correlated with brand equity construct, confirming that they are theoretically measures of different concepts.

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Appendix

Appendix 01 – Insígnia Brand Value Survey

Inserido no âmbito de uma investigação sobre o valor da marca da distribuição e para efeitos de validação científica deste trabalho de investigação, estamos a realizar um questionário que muito agradecemos a sua resposta.
Todas as informações prestadas no âmbito deste questionário são estritamente confidenciais, sendo que, em lado algum é solicitada a identificação do inquirido, e serão utilizadas exclusivamente no âmbito específico deste trabalho de investigação científica.

Por favor responda a todas as questões que lhe são formuladas. Leia, atentamente, cada uma delas antes de responder pois a qualidade da sua resposta é importante para o resultado final.

Nota explicativa:
Marca de Fabricante são os produtos que, normalmente, são fabricados por organizações/marcas de referência na categoria de produto (p. ex. Nestlé, Dodot, Mimosa, …).

1. **Exprima o seu grau de concordância/discordância relativamente às seguintes afirmações (Faça-o, assinalando a sua opção num dos números entre 1 e 7):**

	1. Discordo Totalmente	2	3	4	5	6	7. Concordo Totalmente	Não Sei
• Gosto que a marca insígnia esteja disponível nos diferentes produtos que compro.	O	O	O	O	O	O	O	O
• Considero a possibilidade de comprar produtos da marca insígnia quando vou às compras no (ponto de venda) .	O	O	O	O	O	O	O	O

	1. Discordo Totalmente	2	3	4	5	6	7. Concordo Totalmente	Não Sei
• Para a maioria dos produtos, a melhor opção de compra costuma ser a compra de produtos da marca insígnia.	O	O	O	O	O	O	O	O
• Faço um bom negócio quando compro produtos da marca insígnia .	O	O	O	O	O	O	O	O
• Quando compro a marca insígnia sinto que estou a fazer uma boa compra.	O	O	O	O	O	O	O	O

2. **Considerando APENAS A CATEGORIA DOS PRODUTOS DE LIMPEZA (detergentes, cera limpa móveis, esfregonas, ...) exprima o seu grau de concordância/discordância relativamente às seguintes afirmações, (Faça-o, assinalando a sua opção num dos números entre 1 e 7):**

	1. Discordo Totalmente	2	3	4	5	6	7. Concordo Totalmente	Não Sei
• Com a marca insígnia encontro os produtos que procuro.	O	O	O	O	O	O	O	O
• Os produtos da marca insígnia correspondem às minhas expectativas.	O	O	O	O	O	O	O	O

	1. Discordo Totalmente	2	3	4	5	6	7. Concordo Totalmente	Não Sei
• Os produtos da marca insígnia dão-me tranquilidade e segurança quando os utilizo.	O	O	O	O	O	O	O	O
• Os produtos da marca insígnia não me deixam ficar mal.	O	O	O	O	O	O	O	O
• A marca insígnia é uma marca honesta.	O	O	O	O	O	O	O	O
• A marca insígnia é uma marca segura.	O	O	O	O	O	O	O	O

3. **Considerando APENAS A CATEGORIA DOS PRODUTOS DE LIMPEZA (detergentes, cera limpa móveis, esfregonas, ...) exprima o seu grau de concordância/discordância relativamente às seguintes afirmações, (Faça-o, assinalando a sua opção num dos números entre 1 e 7):**

	1. Discordo Totalmente	2	3	4	5	6	7. Concordo Totalmente	Não Sei
• Valorizo os preços baixos, mas estou igualmente preocupada(o) com a qualidade do produto.	O	O	O	O	O	O	O	O

	1. Discordo Totalmente	2	3	4	5	6	7. Concordo Totalmente	Não Sei
• Ao fazer compras comparo os preços das diferentes marcas para ter a certeza de que faço a melhor compra.	O	O	O	O	O	O	O	O
• Ao comprar um produto, tento maximizar a qualidade que obtenho por cada cêntimo que gasto.	O	O	O	O	O	O	O	O
• Quando compro os produtos da marca insígnia gosto de ter a certeza de que estou a pagar o valor justo.	O	O	O	O	O	O	O	O
• Geralmente começo por procurar os preços mais baixos nos produtos que compro, mas ainda têm de cumprir alguns requisitos de qualidade antes de os comprar.	O	O	O	O	O	O	O	O
• Quando vou às compras costumo comparar o "preço por Kg/lt".	O	O	O	O	O	O	O	O
• Comparo os preços dos produtos para ter a certeza de que faço a melhor compra.	O	O	O	O	O	O	O	O

4. **Considerando APENAS A CATEGORIA DOS PRODUTOS DE LIMPEZA (detergentes, cera limpa móveis, esfregonas, ...) exprima o seu grau de concordância/discordância relativamente às seguintes afirmações, (Faça-o, assinalando a sua opção num dos números entre 1 e 7):**

	1. Discordo Totalmente	2	3	4	5	6	7. Concordo Totalmente	Não Sei
• Os produtos da marca insígnia não vão ao encontro do que procuro para mim.	O	O	O	O	O	O	O	O
• A compra de produtos da marca insígnia seria arriscada, porque os meus amigos e familiares não a iriam aprovar.	O	O	O	O	O	O	O	O
• A compra de produtos da marca insígnia seria arriscada, porque os outros pensariam menos bem de mim.	O	O	O	O	O	O	O	O
• Em geral acho que é arriscado optar pelos produtos da marca insígnia.	O	O	O	O	O	O	O	O
• No meu caso específico é arriscado optar pelos produtos da marca insígnia.	O	O	O	O	O	O	O	O
• Acho que é arriscado optar pelos produtos da marca insígnia por não corresponderem aos outros produtos que uso.	O	O	O	O	O	O	O	O

	1. Discordo Totalmente	2	3	4	5	6	7. Concordo Totalmente	Não Sei
• Sinto que estou a perder dinheiro ao comprar um produto da marca insígnia em vez de um de uma marca do fabricante.	O	O	O	O	O	O	O	O
• Acho que é financeiramente arriscado optar pelos produtos da marca insígnia.	O	O	O	O	O	O	O	O

5. **Considerando APENAS A CATEGORIA DOS PRODUTOS DE LIMPEZA (detergentes, cera limpa móveis, esfregonas, ...) exprima o seu grau de concordância/discordância relativamente às seguintes afirmações, (Faça-o, assinalando a sua opção num dos números entre 1 e 7):**

	1. Discordo Totalmente	2	3	4	5	6	7. Concordo Totalmente	Não Sei
• Ao comprar um produto da marca insígnia acredito que fico tão bem servida(o) como se comprasse uma marca de fabricante.	O	O	O	O	O	O	O	O
• Valorizo a poupança realizada ao comprar produtos da marca insígnia.	O	O	O	O	O	O	O	O

	1. Discordo Totalmente	2	3	4	5	6	7. Concordo Totalmente	Não Sei
• Sinto orgulho na compra de produtos da marca insígnia.	O	O	O	O	O	O	O	O
• Sinto-me bem ao comprar produtos com a marca insígnia.	O	O	O	O	O	O	O	O
• A marca insígnia cumpre com as funções desejadas.	O	O	O	O	O	O	O	O
• A marca insígnia corresponde às minhas expectativas.	O	O	O	O	O	O	O	O
• A marca insígnia dá-me a mesma garantia de qualidade de uma marca de fabricante.	O	O	O	O	O	O	O	O
• Com produtos da marca insígnia consigo que a cesta/carrinho de compras venha mais cheia.	O	O	O	O	O	O	O	O
• Sinto-me um consumidor inteligente ao comprar a marca insígnia.	O	O	O	O	O	O	O	O

	1. Discordo Totalmente	2	3	4	5	6	7. Concordo Totalmente	Não Sei
• A marca insígnia ajuda-me a poupar.	O	O	O	O	O	O	O	O

6. Considerando APENAS A CATEGORIA DOS PRODUTOS DE LIMPEZA (detergentes, cera limpa móveis, esfregonas, ...) exprima o seu grau de concordância/discordância relativamente às seguintes afirmações, (Faça-o, assinalando a sua opção num dos números entre 1 e 7):

	1. Discordo Totalmente	2	3	4	5	6	7. Concordo Totalmente	Não Sei
• Irei comprar marca (ponto de venda) da próxima vez que adquirir esta categoria de produto.	O	O	O	O	O	O	O	O
• Tenciono continuar a comprar a marca insígnia nesta categoria de produto.	O	O	O	O	O	O	O	O
• Se obtivesse um produto gratuito desta categoria de produto, escolheria o da marca insígnia.	O	O	O	O	O	O	O	O

	1. Discordo Totalmente	2	3	4	5	6	7. Concordo Totalmente	Não Sei
• Prefiro comprar a marca insígnia, embora existam outras marcas de referência/prestígio de igual qualidade e preço.	O	O	O	O	O	O	O	O

7. Considerando APENAS A CATEGORIA DOS PRODUTOS DE LIMPEZA (detergentes, cera limpa móveis, esfregonas, ...) exprima o seu grau de concordância/discordância relativamente às seguintes afirmações, (Faça-o, assinalando a sua opção num dos números entre 1 e 7):

	1. Discordo Totalmente	2	3	4	5	6	7. Concordo Totalmente	Não Sei
• A compra de produtos da marca insígnia é uma decisão de bom senso.	O	O	O	O	O	O	O	O
• Sinto-me bem por comprar produtos da marca insígnia.	O	O	O	O	O	O	O	O
• Estou, em geral, satisfeita(o) com os produtos da marca insígnia.	O	O	O	O	O	O	O	O
• Os produtos da marca insígnia ficam aquém das expectativas.	O	O	O	O	O	O	O	O

	1. Discordo Totalmente	2	3	4	5	6	7. Concordo Totalmente	Não Sei
• Os produtos da marca insígnia correspondem ao meu ideal de produto.	O	O	O	O	O	O	O	O
• Recomendo, sem dúvida, a marca insígnia a outras pessoas.	O	O	O	O	O	O	O	O

8. Sexo:

Masculino Feminino

9. Idade

Idade (anos): ☐

10. Estado Civil:

- ○ Casada(o)
- ○ União de facto
- ○ Solteira(o)
- ○ Divorciada(o)/ Separada(o)
- ○ Viúva(o)

11. Composição do agregado familiar:

N. de pessoas: ☐

N. filhos com idades compreendidas entre 0 e 7 anos de idade:

N. filhos com idades compreendidas entre 8 e 17 anos de idade:

N. filhos > 18 anos de idade:

12. Quais são as suas Habilitações literárias?- Indique o grau mais elevado que *completou

- Menos que o 4ºano/ 4ª classe
- 4º ano/ 4ª classe completa
- 9º ano completo
- 12º ano completo
- Ensino superior (bacharelato, licenciatura ou mais elevado)

13. Ocupação Profissional

- Estudante.
- Trabalhador/estudante
- Doméstica (o).
- Reformado.
- Desempregado.
- À procura do 1º emprego.
- Exerce uma profissão.

Qual? (especifique)

14. Qual o valor do rendimento mensal líquido, médio, do seu agregado familiar? (Escolha o intervalo de rendimento)

- Menos que €500
- €501 a €1.000
- €1.001 a €1.500
- €1.501 a €2.000
- >€2.000

Muito obrigada pela sua colaboração!

Appendix 02 – Insignia Brand Value Survey – Pingo Doce official site

Appendix 03 – Insignia Brand Value Survey – Dia/ Minipreço official facebook page

Appendix 04 – Simple and multivariate YIBV binary Logit models

1- Simple Binary Logit. YIBV|

Gender

Dependent Variable: YIBV
Method: ML - Binary Logit (Quadratic hill climbing)
Sample: 1 3200
Included observations: 3035
Convergence achieved after 4 iterations
QML (Huber/White) standard errors & covariance

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-1.002496	0.162638	-6.163987	0.0000
Female	0.452450	0.088876	5.090794	0.0000

McFadden R-squared	0.006332	Mean dependent var	0.450412
S.D. dependent var	0.497617	S.E. of regression	0.495551
Akaike info criterion	1.369045	Sum squared resid	744.8177
Schwarz criterion	1.373011	Log likelihood	-2075.526
Hannan-Quinn criter.	1.370471	Deviance	4151.052
Restr. deviance	4177.502	Restr. log likelihood	-2088.751
LR statistic	26.45026	Avg. log likelihood	-0.683864
Prob(LR statistic)	0.000000		

Obs with Dep=0	1668	Total obs	3035
Obs with Dep=1	1367		

AGE_Categories

Dependent Variable: YIBV
Method: ML - Binary Logit (Quadratic hill climbing)
Sample: 1 3200
Included observations: 3027
Convergence achieved after 3 iterations
QML (Huber/White) standard errors & covariance

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-0.248698	0.102321	-2.430574	0.0151
26-50 age	0.028533	0.110203	0.258913	0.7957
≥ 51 age	0.520632	0.169772	3.066644	0.0022

McFadden R-squared	0.003030	Mean dependent var	0.453254
S.D. dependent var	0.497892	S.E. of regression	0.497011
Akaike info criterion	1.375349	Sum squared resid	746.9883
Schwarz criterion	1.381310	Log likelihood	-2078.590
Hannan-Quinn criter.	1.377492	Deviance	4157.180
Restr. deviance	4169.816	Restr. log likelihood	-2084.908
LR statistic	12.63609	Avg. log likelihood	-0.686683
Prob(LR statistic)	0.001803		

Obs with Dep=0	1655	Total obs	3027
Obs with Dep=1	1372		

CIVIL STATUS

Dependent Variable: YIBV
Method: ML - Binary Logit (Quadratic hill climbing)
Sample: 1 3200
Included observations: 3038
Convergence achieved after 3 iterations
QML (Huber/White) standard errors & covariance

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-0.128489	0.052924	-2.427809	0.0152
facto relationship	-0.095371	0.096179	-0.991597	0.3214
Single	-0.267091	0.091034	-2.933986	0.0033
Divorced	0.266273	0.155131	1.716440	0.0861
Widowed	0.336128	0.377126	0.891289	0.3728

McFadden R-squared	0.003710	Mean dependent var	0.451613
S.D. dependent var	0.497735	S.E. of regression	0.496791
Akaike info criterion	1.375098	Sum squared resid	748.5484
Schwarz criterion	1.385004	Log likelihood	-2083.774
Hannan-Quinn criter.	1.378659	Deviance	4167.548
Restr. deviance	4183.066	Restr. log likelihood	-2091.533
LR statistic	15.51837	Avg. log likelihood	-0.685903
Prob(LR statistic)	0.003738		

Obs with Dep=0	1666	Total obs	3038
Obs with Dep=1	1372		

HOUSEHOLD NUMBER OF MEMBERS

Dependent Variable: YIBV
Method: ML - Binary Logit (Quadratic hill climbing)
Sample (adjusted): 2 3200
Included observations: 2745 after adjustments
Convergence achieved after 3 iterations
QML (Huber/White) standard errors & covariance

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-0.379490	0.064647	-5.870218	0.0000
3-5 members	0.258601	0.081110	3.188278	0.0014
≥ 6 members	0.681771	0.235223	2.898395	0.0038

	0.004075	Mean dependent var	0.449909
S.D. dependent var	0.497575	S.E. of regression	0.496361
Akaike info criterion	1.372819	Sum squared resid	675.5569
Schwarz criterion	1.379286	Log likelihood	-1881.194
Hannan-Quinn criter.	1.375156	Deviance	3762.388
Restr. deviance	3777.782	Restr. log likelihood	-1888.891
LR statistic	15.39386	Avg. log likelihood	-0.685317
Prob(LR statistic)	0.000454		

Obs with Dep=0	1510	Total obs	2745
Obs with Dep=1	1235		

EDUCATION_3 Categories

Dependent Variable: YIBV
Method: ML - Binary Logit (Quadratic hill climbing)
Sample: 1 3200
Included observations: 3031
Convergence achieved after 3 iterations
QML (Huber/White) standard errors & covariance

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	0.600366	0.099002	6.064195	0.0000
Secondary	-0.705200	0.114610	-6.153027	0.0000
University	-1.146078	0.113651	-10.08418	0.0000

McFadden R-squared	0.026604	Mean dependent var	0.450346
S.D. dependent var	0.497611	S.E. of regression	0.488627
Akaike info criterion	1.341777	Sum squared resid	722.9543
Schwarz criterion	1.347732	Log likelihood	-2030.463
Hannan-Quinn criter.	1.343918	Deviance	4060.926
Restr. deviance	4171.917	Restr. log likelihood	-2085.959
LR statistic	110.9915	Avg. log likelihood	-0.669899
Prob(LR statistic)	0.000000		

Obs with Dep=0	1666	Total obs	3031
Obs with Dep=1	1365		

HOUSEHOLD INCOME

Dependent Variable: YIBV
Method: ML - Binary Logit (Quadratic hill climbing)
Sample: 1 3200
Included observations: 1334
Convergence achieved after 4 iterations
QML (Huber/White) standard errors & covariance

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	0.421214	0.280836	1.499854	0.1337
501-1000 income	-0.798844	0.297966	-2.680991	0.0073
1001-1500 income	-0.694644	0.299905	-2.316212	0.0205
1501-2000 income	-1.003819	0.311433	-3.223227	0.0013
> 2000	-1.296682	0.312663	-4.147225	0.0000

McFadden R-squared	0.013600	Mean dependent var	0.391304
S.D. dependent var	0.488225	S.E. of regression	0.484498
Akaike info criterion	1.327946	Sum squared resid	311.9666
Schwarz criterion	1.347421	Log likelihood	-880.7402
Hannan-Quinn criter.	1.335244	Deviance	1761.480
Restr. deviance	1785.767	Restr. log likelihood	-892.8835
LR statistic	24.28669	Avg. log likelihood	-0.660225
Prob(LR statistic)	0.000070		

Obs with Dep=0	812	Total obs	1334
Obs with Dep=1	522		

2- Multivariate Logit. YIBV| All variables, except household income

Initial Model – 5 vv– all categories of all 5 variables

Dependent Variable: YIBV
Method: ML - Binary Logit (Quadratic hill climbing)
Sample (adjusted): 2 3200
Included observations: 2677 after adjustments
Convergence achieved after 3 iterations
QML (Huber/White) standard errors & covariance

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-0.728966	0.212300	-3.433661	0.0006
Female	0.635892	0.099293	6.404193	0.0000
≥ 51 age	0.582186	0.166617	3.494159	0.0005
Single	-0.107632	0.096155	-1.119361	0.2630
Divorced	0.265094	0.178160	1.487954	0.1368
3-5 members	0.237364	0.087058	2.726503	0.0064
≥ 6 members	0.525920	0.255069	2.061874	0.0392
Secondary education	-0.723879	0.126328	-5.730160	0.0000
University education	-1.108208	0.126165	-8.783767	0.0000

McFadden R-squared	0.042730	Mean dependent var	0.448263
S.D. dependent var	0.497409	S.E. of regression	0.483678
Akaike info criterion	1.323514	Sum squared resid	624.1625
Schwarz criterion	1.343324	Log likelihood	-1762.523
Hannan-Quinn criter.	1.330681	Deviance	3525.046
Restr. deviance	3682.396	Restr. log likelihood	-1841.198
LR statistic	157.3502	Avg. log likelihood	-0.658395
Prob(LR statistic)	0.000000		

Obs with Dep=0	1477	Total obs	2677
Obs with Dep=1	1200		

Final Model -5 vv (pvalue 0,1)

Dependent Variable: YIBV
Method: ML - Binary Logit (Quadratic hill climbing)
Sample (adjusted): 2 3200
Included observations: 2677 after adjustments
Convergence achieved after 3 iterations
QML (Huber/White) standard errors & covariance

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-0.750555	0.211412	-3.550204	0.0004
Female	0.629243	0.099125	6.348001	0.0000
≥ 51 age	0.602493	0.165851	3.632732	0.0003
Divorced	0.295300	0.176339	1.674614	0.0940
3-5 members	0.255062	0.085673	2.977138	0.0029
≥ 6 members	0.540644	0.254906	2.120953	0.0339
Secondary education	-0.730490	0.126189	-5.788840	0.0000
University education	-1.120930	0.125694	-8.917907	0.0000

McFadden R-squared	0.042388	Mean dependent var	0.448263
S.D. dependent var	0.497409	S.E. of regression	0.483704
Akaike info criterion	1.323238	Sum squared resid	624.4657
Schwarz criterion	1.340847	Log likelihood	-1763.153
Hannan-Quinn criter.	1.329608	Deviance	3526.307
Restr. deviance	3682.396	Restr. log likelihood	-1841.198
LR statistic	156.0895	Avg. log likelihood	-0.658630
Prob(LR statistic)	0.000000		
Obs with Dep=0	1477	Total obs	2677
Obs with Dep=1	1200		

Final Model – 5 vv (pvalue 0,05)

Dependent Variable: YIBV
Method: ML - Binary Logit (Quadratic hill climbing)
Sample (adjusted): 2 3200
Included observations: 2691 after adjustments
Convergence achieved after 3 iterations
QML (Huber/White) standard errors & covariance

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-0.744426	0.210829	-3.530949	0.0004
Female	0.649089	0.098878	6.564529	0.0000
≥ 51 age	0.659580	0.163689	4.029471	0.0001
3-5 members	0.227358	0.084420	2.693185	0.0071
≥ 6 members	0.529778	0.251691	2.104874	0.0353
Secondary education	-0.734111	0.126005	-5.826037	0.0000
University education	-1.140424	0.125468	-9.089382	0.0000

McFadden R-squared	0.042365	Mean dependent var	0.448532
S.D. dependent var	0.497436	S.E. of regression	0.483648
Akaike info criterion	1.322601	Sum squared resid	627.8299
Schwarz criterion	1.337943	Log likelihood	-1772.560
Hannan-Quinn criter.	1.328150	Deviance	3545.120
Restr. deviance	3701.954	Restr. log likelihood	-1850.977
LR statistic	156.8342	Avg. log likelihood	-0.658699
Prob(LR statistic)	0.000000		
Obs with Dep=0	1484	Total obs	2691
Obs with Dep=1	1207		

3- Multivariate Logit. YIBV| All variables, including household income

Inícial Model (all categories of all 6 variables)

Dependent Variable: YIBV
Method: ML - Binary Logit (Quadratic hill climbing)
Sample (adjusted): 2 3200
Included observations: 1147 after adjustments
Convergence achieved after 4 iterations
QML (Huber/White) standard errors & covariance

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-0.093578	0.415200	-0.225379	0.8217
Female	0.307229	0.140915	2.180247	0.0292
≥ 51 age	0.529338	0.266076	1.989425	0.0467
Single	-0.098702	0.164817	-0.598857	0.5493
Divorced	0.472482	0.272744	1.732325	0.0832
3-5 members	0.421720	0.140646	2.998444	0.0027
≥ 6 members	1.234067	0.411599	2.998227	0.0027
Secondary education	-0.617257	0.184304	-3.349128	0.0008
University education	-0.779575	0.203051	-3.839306	0.0001
501-1000 income	-0.525987	0.328540	-1.600985	0.1094
1001-1500 income	-0.501273	0.337733	-1.484228	0.1377
1501-2000 income	-0.794906	0.353950	-2.245813	0.0247
> 2000 income	-1.036036	0.372436	-2.781787	0.0054

McFadden R-squared	0.044123	Mean dependent var	0.387097
S.D. dependent var	0.487299	S.E. of regression	0.475639
Akaike info criterion	1.298633	Sum squared resid	256.5472
Schwarz criterion	1.355811	Log likelihood	-731.7658
Hannan-Quinn criter.	1.320219	Deviance	1463.532
Restr. deviance	1531.088	Restr. log likelihood	-765.5442
LR statistic	67.55676	Avg. log likelihood	-0.637982
Prob(LR statistic)	0.000000		

Obs with Dep=0	703	Total obs	1147
Obs with Dep=1	444		

Final Model – 6 variables- pval 0.10

Dependent Variable: YIBV
Method: ML - Binary Logit (Quadratic hill climbing)
Sample (adjusted): 2 3200
Included observations: 1147 after adjustments
Convergence achieved after 4 iterations
QML (Huber/White) standard errors & covariance

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-0.662115	0.293160	-2.258543	0.0239
Female	0.340712	0.139983	2.433953	0.0149
≥ 51 age	0.516315	0.264296	1.953548	0.0508
Divorced	0.517819	0.263630	1.964188	0.0495
3-5 members	0.414691	0.136451	3.039112	0.0024
≥ 6 members	1.221747	0.417247	2.928117	0.0034
Secondary education	-0.669686	0.182288	-3.673781	0.0002
University education	-0.892858	0.195035	-4.577928	0.0000
> 2000 income	-0.432586	0.185861	-2.327470	0.0199

McFadden R-squared	0.040382	Mean dependent var	0.387097
S.D. dependent var	0.487299	S.E. of regression	0.475919
Akaike info criterion	1.296652	Sum squared resid	257.7563
Schwarz criterion	1.336237	Log likelihood	-734.6300
Hannan-Quinn criter.	1.311597	Deviance	1469.260
Restr. deviance	1531.088	Restr. log likelihood	-765.5442
LR statistic	61.82830	Avg. log likelihood	-0.640480
Prob(LR statistic)	0.000000		

Obs with Dep=0	703	Total obs	1147
Obs with Dep=1	444		

Final Model - 6 variables- pvalue 0,05

Dependent Variable: YIBV
Method: ML - Binary Logit (Quadratic hill climbing)
Sample (adjusted): 2 3200
Included observations: 1152 after adjustments
Convergence achieved after 4 iterations
QML (Huber/White) standard errors & covariance

Variable	Coefficient	Std. Error	z-Statistic	Prob.
C	-0.590603	0.291726	-2.024513	0.0429
Female	0.330568	0.139637	2.367339	0.0179
Divorced	0.534378	0.261444	2.043945	0.0410
3-5 members	0.405594	0.136349	2.974678	0.0029
≥ 6 members	1.234133	0.425093	2.903207	0.0037
Secondary education	-0.701162	0.180802	-3.878061	0.0001
University education	-0.943706	0.192978	-4.890231	0.0000
> 2000 income	-0.359920	0.181931	-1.978329	0.0479

McFadden R-squared	0.038877	Mean dependent var	0.386285
S.D. dependent var	0.487109	S.E. of regression	0.475918
Akaike info criterion	1.296137	Sum squared resid	259.1140
Schwarz criterion	1.331202	Log likelihood	-738.5751
Hannan-Quinn criter.	1.309372	Deviance	1477.150

Restr. deviance	1536.900	Restr. log likelihood	-768.4498
LR statistic	59.74939	Avg. log likelihood	-0.641124
Prob(LR statistic)	0.000000		
Obs with Dep=0	707	Total obs	1152
Obs with Dep=1	445		